

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

**FORM S-1  
REGISTRATION STATEMENT**

*Under  
The Securities Act of 1933*

**IKENA ONCOLOGY, INC.**

(Exact name of registrant as specified in its charter)

Delaware  
(State or other jurisdiction of  
incorporation or organization)

2836  
(Primary Standard Industrial  
Classification Code Number)

81-1697316  
(I.R.S. Employer  
Identification Number)

50 Northern Avenue  
Boston, MA 02210  
(857) 273-8343

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Mark Manfredi, Ph.D.  
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**Approximate date of commencement of proposed sale to the public:** As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer  Accelerated Filer   
Non-Accelerated Filer  Smaller Reporting Company   
Emerging Growth Company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided to Section 7(a)(2)(B) of the Securities Act.

**CALCULATION OF REGISTRATION FEE**

Title of each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price(1)(2)	Amount of Registration Fee
Common Stock, par value \$0.001 per share	\$	\$

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.

(2) Includes the offering price of shares that the underwriters may purchase pursuant to an option to purchase additional shares.

**The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment that specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until this registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.**

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED \_\_\_\_\_, 2021

PRELIMINARY PROSPECTUS

Shares



Common Stock

We are offering \_\_\_\_\_ shares of common stock. This is our initial public offering of our common stock.

Prior to this offering, there has been no public market for our shares. We expect that the initial public offering price will be between \$ \_\_\_\_\_ and \$ \_\_\_\_\_ per share. We intend to apply to list our common stock on The Nasdaq Global Market under the symbol "IKNA."

We are an "emerging growth company" under the federal securities laws and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus and for future filings.

Investing in our common stock involves a high degree of risk. See "[Risk Factors](#)" beginning on page 14 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission approved or disapproved of the securities that may be offered under this prospectus, nor have any of these organizations determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	PER SHARE	TOTAL
Public offering price	\$ _____	\$ _____
Underwriting discount(1)	\$ _____	\$ _____
Proceeds, before expenses, to us	\$ _____	\$ _____

(1) We refer you to "Underwriting" beginning on page 204 for additional information regarding underwriting compensation.

Delivery of the shares of common stock will be made on or about \_\_\_\_\_, 2021.

We have granted the underwriters an option for a period of 30 days to purchase up to an additional \_\_\_\_\_ shares of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be \$ \_\_\_\_\_, and the total proceeds to us, before expenses, will be \$ \_\_\_\_\_.

Joint Book-Running Managers

Jefferies

Cowen

Credit Suisse

William Blair

The date of this prospectus is \_\_\_\_\_, 2021.

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Through and including \_\_\_\_\_, 2021 (25 days after the commencement of this offering), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

We have not, and the underwriters have not, authorized anyone to provide any information or to make any representation other than those contained in this prospectus, any amendment or supplement to this prospectus or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares of common stock offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus, any amendment or supplement to this prospectus or any applicable free writing prospectus is current only as of its date, regardless of its time of delivery or any sale of shares of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside the United States: We have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside the United States.

The market data and certain other statistical information used throughout this prospectus are based on independent industry publications, governmental publications, reports by market research firms, or other independent sources that we believe to be reliable sources. Industry publications and third-party research, surveys, and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. We are responsible for all of the disclosure contained in this prospectus, and we believe that these sources are reliable; however, we have not independently verified the information contained in such publications. While we are not aware of any misstatements regarding any third-party information presented in this prospectus, their estimates, in particular, as they relate to projections, involve numerous assumptions, are subject to risks and uncertainties, and are subject to change based on various factors, including those discussed under the section entitled “Risk Factors” and elsewhere in this prospectus. Some data are also based on our good faith estimates.

## PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including our consolidated financial statements and the related notes included elsewhere in this prospectus. You should also consider, among other things, the matters described under “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” in each case appearing elsewhere in this prospectus. Unless the context otherwise requires, the terms “Ikena,” “Ikena Oncology,” “the Company,” “the Registrant,” “we,” “us,” and “our” in this prospectus refer to Ikena Oncology, Inc. and its subsidiaries.

### Overview

We are a targeted oncology company focused on developing novel cancer therapies targeting key signaling pathways that drive the formation and spread of cancer. Our programs focus on key cancer driver pathways that are well-validated in scientific literature but lack approved or effective therapies and therefore have the potential to address high unmet medical needs. By leveraging our deep understanding of discovery chemistry, translational science, and patient-centric drug development, we have built a deep pipeline of wholly owned and partnered programs focused on genetically defined or biomarker-driven cancers, which enables us to target specific patient populations that we believe are most likely to respond to treatment with our product candidates. Since we commenced operations in 2016, we have discovered or developed five oncology programs that include four product candidates in either IND-enabling studies or clinical development.

Our lead targeted oncology product candidate, IK-930, is an oral small molecule inhibitor of the transcriptional enhanced associate domain, or TEAD, transcription factor in the Hippo signaling pathway. The Hippo pathway is widely accepted as a key and prevalent driver of cancer pathogenesis and is genetically altered in approximately 10% of all cancers, and such genetic alterations are generally associated with poor clinical outcomes. We intend to pursue clinical development of IK-930 across a wide range of tumor types with known Hippo pathway mutations, and plan to focus our initial development efforts on indications that provide the potential for rapid clinical development to achieve proof-of-concept, such as mesothelioma and soft tissue sarcomas. We intend to submit an Investigational New Drug application, or IND, to the U.S. Food and Drug Administration, or FDA, for IK-930 in the second half of 2021.

For our second targeted oncology program, we have discovered and plan to develop oral small molecule inhibitors of extracellular signal-related kinase 5, or ERK5, a downstream enzyme in the RAS signaling pathway, which have the potential to bring therapeutic benefit to cancer patients with a mutation in the kirsten rat sarcoma, or KRAS, gene, which is an oncogene implicated in many cancers. We anticipate nominating a development candidate for the ERK5 program and initiating IND-enabling studies in the second half of 2021 with the goal of submitting an IND in the second half of 2022.

In addition to the programs described above, we have ongoing discovery programs in targeted oncology focused on the development of novel drug candidates that target key nodes within the RAS pathway, and expect to nominate the first development candidate resulting from these discovery programs in 2022.




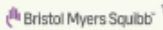
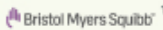

In addition to our targeted oncology programs, we have three product candidates designed to modulate the tumor microenvironment in specific patient populations by leveraging biomarker-driven patient enrichment strategies. Two of these product candidates, IK-175 and IK-412, are partnered with Bristol-Myers Squibb Company, or BMS, which we believe validates our ability to rapidly advance internally developed product candidates into clinical development using biomarker-driven patient enrichment strategies. The programs are as follows:

- IK-175 is an oral inhibitor of aryl hydrocarbon receptor, or AHR. We are currently enrolling patients with bladder cancer with activated AHR in a dose expansion cohort of a Phase 1 clinical trial of IK-175

as a monotherapy. Additionally, we plan on assessing IK-175 in combination with nivolumab in patients with bladder cancer in the first half of 2021 in the Phase 1b portion of the clinical trial. We expect to complete enrollment in both treatment arms in the second half of 2022.

- IK-412 is an enzyme therapy designed to lower levels of immunosuppressive kynurenine in the tumor microenvironment. We are currently conducting IND-enabling studies of IK-412 and intend to submit an IND in the second half of 2021.
- Finally, we are evaluating IK-007, an oral antagonist of prostaglandin E2 receptor 4, or EP4, in a Phase 1b clinical trial in biomarker-enriched patients with microsatellite stable colorectal cancer, or MSS CRC, who express high levels of an EP4 pathway metabolite called PGE2 Metabolite, or PGEM. We expect to complete enrollment for the Phase 1b clinical trial in the second half of 2021.

Our current pipeline of discovery and clinical programs is shown below:

Program	Target	Lead Indication(s)	Stage	Next Milestone(s)	Product Rights
<b>Targeted Oncology Programs</b>					
IK-930	TEAD	Hippo-mutated cancers	IND-enabling	2H 2021: Submit IND	
RAS Signaling	ERK5	KRAS-mutated cancers	Lead Optimization	2H 2021: Initiate IND-enabling studies 2H 2022: Submit IND	
RAS Pathway	Multiple	Solid Tumors	Discovery	2022: Nominate Development Candidate	
<b>Tumor Microenvironment Programs</b>					
IK-175	AHR	Biomarker enriched bladder cancer	Phase 1a (single agent)	1H 2021: Initiate Phase 1b combination arm 2H 2022: Complete Phase 1 enrollment	 <sup>1</sup>
IK-412	Kynurenine	Solid Tumors	IND-enabling	2H 2021: Submit IND	 <sup>1</sup>
IK-007 +pembro <sup>2</sup>	EP4	Biomarker enriched MSS CRC	Phase 1b	2H 2021: Complete Phase 1b enrollment	 <sup>3</sup>

<sup>1</sup> BMS has the right to exclusively license under a master collaboration agreement  
<sup>2</sup> Pembrolizumab provided through a clinical trial collaboration and supply agreement with Merck.  
<sup>3</sup> Ikena has a worldwide exclusive license except China and Taiwan from AsuAT.

### Our Discovery and Development Approach

We employ a patient-centric research and development, or R&D, approach across discovery chemistry and biology, translational science and clinical development. We select new programs based on two key strategic principles:

- Cancer driver targets must have a compelling biological rationale, including:
  - Tumor intrinsic changes such as mutations, gene fusions, and gene amplifications; and
  - Strong clinical rationale with the potential to develop a first-in-class or best-in-class therapeutic.

- Alignment with a translational path in disease indications with high unmet medical need, including:
  - No currently approved therapies, or patient populations that are underserved by current treatments; and
  - A biomarker-driven proof-of-concept clinical development plan.

We pursue the discovery and development of small molecule modulators of targets in any target classes that meet these key strategic principles, using structural biology-guided chemistry and applying our deep cancer biology expertise to rigorously select the best molecules for development. In parallel, we generate and validate biomarkers in order to enrich our programs for patients who we believe may be most likely to benefit from treatment with our product candidates. We then develop our own assays to analyze the impact that our product candidates have on these biomarkers, based on our translational insights. We then design clinical trials with the potential to demonstrate rapid proof-of-concept based on these biomarker strategies for the treatment of patients in disease indications with high unmet medical needs.

## **Our Targeted Oncology Programs**

### ***IK-930, a TEAD inhibitor***

Our lead targeted oncology product candidate, IK-930, is an internally discovered, oral small molecule inhibitor of the transcription factor known as TEAD. Aberrant activation of TEAD caused by mutations in the Hippo tumor suppressor pathway can drive the formation and survival of tumors and the development of resistance to multiple existing therapies. We believe that IK-930 is one of the most advanced TEAD inhibitors currently in development for this important, but historically undruggable, target. The Hippo pathway is widely accepted as a key and prevalent driver of cancer pathogenesis and is genetically altered in approximately 10% of all cancers, and such genetic alterations are generally associated with poor patient outcomes. In certain tumors, such as mesothelioma and epithelioid hemangioendothelioma, or EHE, a type of soft tissue sarcoma, genetic alterations in the Hippo pathway are found in over 40% of patients. IK-930 is designed to potently and selectively bind to TEAD and inhibit TEAD-dependent gene expression. In our preclinical studies, IK-930 has been well tolerated and has shown favorable pharmacokinetics and pharmacodynamics. Moreover, we observed potent antitumor activity in preclinical studies using tumor models that harbored genetic alterations within the Hippo pathway. We intend to pursue clinical development of IK-930 across a wide range of tumor types with known Hippo pathway genetic alterations, and plan to focus our initial development efforts on indications such as mesothelioma and soft tissue sarcomas, that provide the potential for rapid clinical development to achieve proof-of-concept in disease indications with high unmet medical need. Moreover, we believe there is potential for a tumor agnostic approach for IK-930 given the prevalence of Hippo pathway genetic alterations in many forms of cancers. We also plan to explore IK-930 in combination with other targeted therapies, such as epidermal growth factor receptor, or EGFR, inhibitors, in more prevalent tumor indications. We intend to submit an IND for IK-930 to the FDA in the second half of 2021.

### ***ERK5 inhibitor / RAS Signaling Pathway inhibitor program***

We are developing a small molecule inhibitor program against ERK5 in the RAS signaling pathway. KRAS mutations in the RAS signaling pathway occur in approximately 26% of all cancers. Although there has been recent progress with development-stage compounds that are designed to directly inhibit certain KRAS mutations, approximately 85% of KRAS mutations are not being addressed by current product candidates or approved therapies. We believe that inhibiting ERK5 provides an opportunity to address a high unmet medical need by modulating a key target downstream in the RAS signaling pathway. In preclinical studies in mice, we observed that knockout of ERK5 prevented tumor formation in genetically engineered KRAS mutant lung and pancreatic cancer. We also observed that inhibition of the target using an ERK5 inhibitor tool compound blocked tumor

growth in patient-derived KRAS mutated xenograft models. Additionally, in preclinical studies in KRAS primary human tumor models of lung and pancreatic cancer, we observed synergistic effects on tumor inhibition by combining an ERK5 inhibitor and trametinib, a mitogen-activated protein kinase, or MEK inhibitor. We plan to pursue clinical development of oral ERK5 inhibitors both as single agent in KRAS mutated pancreatic and lung cancer and in combination with other targeted therapies to address resistance to MEK inhibitors. We anticipate nominating a development candidate and initiating IND-enabling studies in this program in the second half of 2021 and submitting an IND in the second half of 2022.

***RAS Pathway discovery programs***

In addition to our TEAD and ERK5 programs, we have several early stage discovery programs in targeted oncology in the RAS pathway. We are focused on well-known targets and mutations in this pathway that lack approved or effective therapies and therefore have the potential to address high unmet medical needs. We expect to nominate the first development candidate resulting from these discovery programs in 2022.

**Our Tumor Microenvironment Programs**

In addition to our core targeted oncology efforts, we are developing biomarker-driven programs against pathways to modulate the tumor microenvironment. We believe these programs have the potential, either as monotherapies or in combination with checkpoint immunotherapies, to overcome broad immunosuppression by modulating both the innate and adaptive immune systems. We have developed biomarkers that we believe will enable us to identify patients who will have a greater likelihood of benefiting from our tumor microenvironment therapies.

***IK-175, an AHR antagonist***

We are developing IK-175, a potent, selective AHR antagonist. AHR is a ligand-dependent transcription factor that drives tumor progression through direct cancer cell and immunosuppressive effect in the tumor microenvironment. In preclinical studies, we observed that inhibition of AHR by IK-175 had potent antitumor activity in AHR-dependent tumors and led to immune-driven antitumor responses. In addition, the combination of IK-175 and an anti-PD-1 checkpoint inhibitor had superior antitumor activity than either agent alone in preclinical tumor models. We have generated translational insights indicating that AHR is activated in a number of cancers including a subset of bladder cancers. We are currently conducting an open-label Phase 1 clinical trial to evaluate IK-175 as both a monotherapy and in combination with a PD-1 checkpoint inhibitor in solid tumors, including bladder cancer. To date, in the monotherapy dose escalation cohorts, IK-175 has been well tolerated and we observed encouraging evidence of pharmacodynamic modulation. We recently initiated monotherapy expansion in bladder cancer patients with tumors that exhibit activated AHR and we are enriching the clinical trial for these patients using our proprietary assays. We plan on assessing IK-175 in combination with nivolumab in patients with bladder cancer in the first half of 2021 in the Phase 1b portion of the clinical trial and expect to complete enrollment in both treatment arms in the second half of 2022. Our IK-175 program is partnered with BMS, which has the right to exclusively license the program through the completion of the Phase 1b portion of the clinical trial. See “—License and Collaboration Agreements —Master Collaboration Agreement with Bristol-Myers Squibb” for additional information.

***IK-412, a recombinant human kynurenine-degrading enzyme***

We are developing IK-412, a recombinant human kynurenine-degrading enzyme that we believe may be able to reduce tumor resistance to checkpoint inhibitors and has the potential to address the shortcomings of other kynurenine-reducing approaches such as inhibition of IDO1 by small molecule inhibitors. Kynurenine is a metabolite of the tryptophan degradation pathway and has long been recognized as an important contributor to immunosuppression. Recent clinical data from BMS suggests that increased kynurenine is an adaptive resistance



mechanism to anti-PD-1 therapy in multiple cancers. We designed IK-412 to be optimized to degrade kynurenine regardless of the source from the kynurenine-producing enzymes IDO1 or TDO2 and to have high stability in plasma, which we observed in non-human primates to be consistent with weekly or biweekly dosing in humans. In preclinical studies, we observed after a single dose in non-human primates that IK-412 led to durable depletion of over 95% of serum levels of kynurenine. In other preclinical studies, we also observed antitumor activity when dosed both as a monotherapy and in combination with checkpoint inhibitors and increased overall survival when dosed in combination with checkpoint inhibitors. To inform our indication selection, we developed several translational assays, including an immunohistochemistry assay using IDO1 or TDO2 antibodies to guide selection of certain solid tumors. We are also working on detecting kynurenine in tumors and in the blood of patients with certain solid tumors. We intend to submit an IND for IK-412 in the second half of 2021. Our IK-412 program is also partnered with BMS, which has the right to exclusively license the program through the completion of the Phase 1b portion of the clinical trial. See “—License and Collaboration Agreements—Master Collaboration Agreement with Bristol-Myers Squibb” for additional information.

#### ***IK-007, an EP4 antagonist***

We are also developing IK-007, an oral selective EP4 receptor antagonist, for the treatment of microsatellite stable colorectal cancer, or MSS CRC, which represents approximately 80% of all patients with CRC. These patients generally do not respond to approved checkpoint inhibitors. In the ongoing Phase 1b clinical trial of IK-007 in combination with pembrolizumab in MSS CRC, we observed encouraging preliminary evidence of antitumor activity in the initial dose escalation cohort and have not observed any dose limiting toxicities, or DLTs. In addition, we have identified an association between higher levels of PGEM, a metabolite in the EP4 pathway, in urine samples collected at study entry with those patients that demonstrated increased clinical benefit. We are enrolling patients in a dose expansion cohort using baseline levels of urinary PGEM to enrich for MSS CRC patients, who we believe will be more likely to respond to treatment. We expect to complete enrollment for the Phase 1b clinical trial in the second half of 2021.

#### **Our Strategy**

We are dedicated to bringing next generation targeted oncology therapies to cancer patients. We plan to achieve this goal by leveraging our deep understanding of complex biologic pathways and biomarker-driven discovery and clinical development. The key components of our strategy are as follows:

- Rapidly advance IK-930 through clinical development.
- Expeditiously progress a development candidate for the RAS signaling program through clinical development.
- Deepen our pipeline of biomarker-driven targeted oncology programs.
- Maximize the value of our pipeline by retaining commercial rights to our targeted oncology programs.
- Develop IK-175 and IK-412, our BMS-partnered programs, through Phase 1b clinical trials and achieve key near-term financial milestones.

#### **Our Team**

We have assembled a leadership team of highly experienced researchers, clinicians and business leaders to advance and broaden our portfolio of patient-directed oncology therapies. Our leadership team includes senior experts with a track record of success at leading biopharmaceutical companies including Takeda Pharmaceutical Company, or Takeda, Merck & Co., Eli Lilly and Company, Pfizer Inc., Novartis International AG,

GlaxoSmithKline plc, H. Lundbeck A/S and Millennium Pharmaceuticals, Inc. Our senior management team includes:

- Mark Manfredi, Ph.D., our Chief Executive Officer and founder, has more than 20 years of oncology R&D experience, previously serving as chief scientific officer of Raze Therapeutics and as an Entrepreneur-in-Residence at Atlas Venture.
- Douglas Carlson, our Chief Financial Officer, brings over 18 years of experience with a multi-disciplinary background in corporate finance, venture capital, mergers and acquisitions, business development and commercial operations with both large and emerging growth healthcare companies.
- Jeffrey Ecsedy, Ph.D., our Chief Scientific Officer, brings over 20 years of experience in both discovery science and clinical translational medicine, and previously served as the head of oncology, translational medicine at Takeda.
- Sergio Santillana, M.D., M.Sc., MBA, our Chief Medical Officer, is a medical oncologist with more than 25 years of oncology drug development and clinical practice experience.
- Maude Tessier, Ph.D., our Chief Business Officer, brings over 15 years of business development, licensing and alliance management experience in pharma, biotech and academia.

Members of our R&D leadership and executive teams bring 23 years of experience on average and have contributed to over 50 INDs and 14 regulatory drug approvals throughout their careers. In addition, we have formed a multidisciplinary advisory board composed of prominent oncology thought leaders from Dana-Farber Cancer Institute, University of California, San Francisco and Vall d'Hebron Institute of Oncology, who will bring extensive strategic, clinical, translational and drug development expertise.

### **Our Leading Investors**

As of December 31, 2020, we have raised over \$160 million from leading life sciences investors and companies that include Atlas Venture, OrbiMed, BMS, Fidelity Management and Research Company, Omega Funds, Surveyor Capital (a Citadel company), Invus, Farallon Capital Management, BVF Partners, L.P., Cowen Healthcare Investments, Logos Capital, and HealthCor Management.

### **Recent Developments**

#### *Amplify Acquisition*

On October 1, 2020, we acquired Amplify Medicines, Inc., or Amplify, pursuant to an Agreement and Plan of Merger. In connection with the merger, we issued 7,863,094 shares of our Series A-2 preferred stock and 3,048,764 shares of common stock to Amplify shareholders.

#### *Series B preferred stock financing*

On December 21, 2020, we issued and sold 85,806,214 shares of our Series B preferred stock at a purchase price of \$1.3985 per share for gross proceeds of approximately \$120.0 million.

### **Impact of COVID-19**

In March 2020, the World Health Organization declared the outbreak of COVID-19 a global pandemic, which continues to spread throughout the United States and worldwide. To date, we have been carefully monitoring the COVID-19 pandemic and its potential impact on our business and have taken important steps to help ensure the safety of our employees and their families and to reduce the spread of COVID-19. We have established a work-from-home policy for all employees, other than those performing or supporting business-critical operations, such

as certain members of our laboratory and facilities staff. For those employees, we have implemented stringent safety measures designed to comply with applicable federal, state and local guidelines instituted in response to the COVID-19 pandemic. We have also maintained efficient communication with our partners and clinical sites as the COVID-19 situation has progressed. We have taken these precautionary steps while maintaining business continuity so that we can continue to progress our programs. While we have experienced some delays in enrollment and site closures at certain of our third-party clinical trial sites, these delays have not had a material impact on our development timelines for our product candidates. We will continue to monitor developments as we address the disruptions and uncertainties relating to the COVID-19 pandemic. See “Risk Factors” for a discussion of the potential adverse impact of the COVID-19 pandemic on our business, results of operations and financial condition.

### **Risks Associated with Our Business**

Our ability to implement our business strategy is subject to numerous risks that you should be aware of before making an investment decision. These risks are described more fully in the section entitled “Risk Factors” in this prospectus. These risks include, among others:

- We are a targeted oncology company with a limited operating history.
- We have incurred significant net losses since our inception and anticipate that we will continue to incur losses for the foreseeable future.
- We have no products approved for commercial sale and have not generated any revenue from product sales.
- Even if we consummate this offering, we will need to raise substantial additional funding. If we are unable to raise capital when needed or on terms acceptable to us, we would be forced to delay, reduce or eliminate some of our product development programs or commercialization efforts.
- The COVID-19 pandemic, or a similar pandemic, epidemic, or outbreak of an infectious disease, may materially and adversely affect our business and our financial results and could cause a disruption to the development of our product candidates.
- We have never successfully completed any clinical trials for our oncology programs, and we may be unable to do so for any product candidates we develop. Certain of our targeted oncology programs are still in preclinical development and may never advance to clinical development.
- Our programs are focused on the development of oncology therapeutics for patients with genetically defined or biomarker-driven cancers, which is a rapidly evolving area of science, and the approach we are taking to discover and develop drugs is novel and may never lead to approved or marketable products.
- Clinical product development involves a lengthy and expensive process, with an uncertain outcome.
- If we are unable to successfully validate, develop and obtain regulatory approval for companion diagnostic tests for our product candidates that require or would commercially benefit from such tests, or experience significant delays in doing so, we may not realize the full commercial potential of these product candidate.
- Interim, top-line, and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to confirmation, audit and verification procedures that could result in material changes in the final data.
- We anticipate that certain of our current product candidates and future product candidates will be used in combination with third-party drugs or biologics, some of which are still in development, and we have limited or no control over the supply, regulatory status, or regulatory approval of such drugs or biologics.

- We may not be able to file INDs to commence clinical trials on the timelines we expect, and even if we are able to, the FDA may not permit us to proceed.
- We may in the future conduct clinical trials for our product candidates outside the United States, and the FDA and comparable foreign regulatory authorities may not accept data from such trials.
- We face substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than we do.
- If the market opportunities for our programs and product candidates are smaller than we estimate or if any regulatory approval that we obtain is based on a narrower definition of the patient population, our revenue and ability to achieve profitability will be adversely affected, possibly materially.
- If our current product candidates or any future product candidates do not achieve broad market acceptance, the revenue that we generate from their sales may be limited, and we may never become profitable.
- We rely on third parties to conduct our Phase 1b clinical trial of IK-007 and Phase 1 clinical trial of IK-175 and expect to rely on third parties to conduct clinical trials for our targeted oncology programs, as well as investigator-sponsored clinical trials of our product candidates. If these third parties do not successfully carry out their contractual duties, comply with regulatory requirements or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.
- We have entered into collaborations and may enter into additional collaborations in the future, and we might not realize the anticipated benefits of such collaborations.
- We contract with third parties for the manufacture of our product candidates for preclinical development and clinical testing, and expect to continue to do so for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.
- If we are unable to obtain and maintain patent and other intellectual property protection for our technology and product candidates or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and drugs similar or identical to ours, and our ability to successfully commercialize our technology and drugs may be impaired.
- Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, deadlines, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated if we fail to comply with these requirements. We may miss a filing deadline for patent protection on these inventions.
- We may initiate, become a defendant in, or otherwise become party to lawsuits to protect or enforce our intellectual property rights, which could be expensive, time-consuming, and unsuccessful.
- Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.
- We may seek priority review designation for one or more of our other product candidates, but we might not receive such designation, and even if we do, such designation may not lead to a faster regulatory review or approval process.
- Our future success depends on our ability to retain key executives and experienced scientists and to attract, retain and motivate qualified personnel.

### **Corporate History**

We were incorporated under the laws of the State of Delaware in February 2016. We are the successor in interest to KYN Therapeutics L.L.C., a limited liability company formed under the laws of the State of Texas in September 2014. In December 2019, we changed our name from Kyn Therapeutics, Inc. to Ikena Oncology, Inc. Our principal corporate office is located at 50 Northern Avenue, 7th Floor, Boston, MA 02210, and our telephone number is (857) 273-8343. Our website address is [www.ikenaoncology.com](http://www.ikenaoncology.com). We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus.

We own various U.S. federal trademark applications and unregistered trademarks, including our company name. All other trademarks or trade names referred to in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus are referred to without the symbols ® and ™, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

### **Implications of Being an Emerging Growth Company**

We qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, as amended. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- being permitted to only disclose two years of audited financial statements in addition to any required unaudited interim financial statements with correspondingly reduced “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure;
- reduced disclosure about our executive compensation arrangements;
- not being required to hold advisory votes on executive compensation or to obtain stockholder approval of any golden parachute arrangements not previously approved; and
- an exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions until the fifth anniversary of our initial public offering or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company on the date that is the earliest of (i) the last day of the fiscal year in which we have total annual gross revenue of \$1.07 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of this offering; (iii) the date on which we have issued more than \$1.0 billion in nonconvertible debt during the previous three years; or (iv) the last day of the fiscal year in which we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission, or SEC, which means the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the prior June 30th. We may choose to take advantage of some but not all of these exemptions. We have taken advantage of reduced reporting requirements in this prospectus. Accordingly, the information contained herein may be different from the information you receive from other public companies in which you hold stock. We are in the process of evaluating the benefits of relying on other exemptions and reduced reporting requirements under the JOBS Act. Subject to certain conditions, as an emerging growth company, we may rely on certain of these exemptions, including without limitation, providing an auditor’s attestation report on our system of internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act.

## THE OFFERING

Common stock offered by us	shares.
Common stock to be outstanding immediately after this offering	shares ( shares if the underwriters exercise their option to purchase additional shares in full).
Underwriters' option to purchase additional shares	We have granted the underwriters an option, exercisable for 30 days after the date of this prospectus, to purchase up to additional shares from us.
Use of proceeds	We estimate that our net proceeds from the sale of shares of our common stock in this offering will be approximately \$ million, or \$ million if the underwriters exercise in full their option to purchase additional shares, assuming an initial public offering price of \$ per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from this offering, together with our existing cash and cash equivalents, to advance the development of our targeted oncology programs, IK-930, ERK5 and other targeted oncology preclinical programs; to advance development of IK-175, IK-412, IK-007; and to fund working capital and general corporate purposes. See "Use of Proceeds" for additional information.
Risk factors	You should carefully read the "Risk Factors" section of this prospectus for a discussion of factors that you should consider before deciding to invest in our common stock.
Proposed Nasdaq Global Market symbol	IKNA

The number of shares of our common stock to be outstanding after this offering is based on 191,466,396 shares of our common stock outstanding as of September 30, 2020, which assumes the automatic conversion of 75,727,268 shares of preferred stock outstanding as of September 30, 2020, 7,863,094 shares of Series A-2 preferred stock issued on October 1, 2020 and 85,806,214 shares of Series B preferred stock issued on December 21, 2020 into an aggregate of 169,396,576 shares of common stock upon the completion of this offering, and includes 3,048,764 shares of common stock issued on October 1, 2020, and excludes:

- 19,046,758 shares of common stock issuable upon the exercise of stock options outstanding as of September 30, 2020, at a weighted average exercise price of \$0.48 per share;
- shares of our common stock that will become available for future issuance under our 2021 Stock Option and Incentive Plan, or 2021 Plan, which will become effective in connection with the completion of this offering; and
- shares of our common stock that will become available for future issuance under our 2021 Employee Stock Purchase Plan, or ESPP, which will become effective in connection with the completion of this offering.

Except as otherwise indicated, all information in this prospectus assumes or gives effect to:

- the conversion of all outstanding shares of our convertible preferred stock into an aggregate of 169,396,576 shares of our common stock immediately prior to the completion of this offering;
- no exercise of the outstanding options described above;
- no exercise by the underwriters of their option to purchase up to an additional            shares of our common stock in this offering;
- a one-for-            reverse split of our common stock, which will become effective prior to the completion of this offering; and
- the filing of our fifth amended and restated certificate of incorporation and the adoption of our amended and restated bylaws, which will occur immediately prior to the completion of this offering.

### SUMMARY CONSOLIDATED FINANCIAL DATA

You should read the following summary financial data together with our consolidated financial statements and the related notes appearing at the end of this prospectus and the “Selected Consolidated Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” sections of this prospectus. We have derived the statement of operations data for the years ended December 31, 2018 and 2019 from our audited consolidated financial statements appearing elsewhere in this prospectus. The statement of operations data for the nine months ended September 30, 2019 and 2020 and the balance sheet data as of September 30, 2020 have been derived from our unaudited financial statements appearing elsewhere in this prospectus and have been prepared on the same basis as the audited financial statements. In the opinion of management, the unaudited data reflect all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of the financial information in those statements. Our historical results are not necessarily indicative of results that should be expected in any future period, and our results for any interim period are not necessarily indicative of results that should be expected for any full year.

	For the Year Ended December 31,		For the Nine Months Ended	
	2018	2019	2019	2020
(In thousands, except share and per share data)				
<b>Statement of Operations Data:</b>				
Research and development revenue under collaboration agreement	\$ —	\$ 13,753	\$ 10,949	\$ 9,129
Service revenue (related party)	990	—		
Total revenue	990	13,753	10,949	9,129
Operating expenses:				
Research and development	38,986	24,938	18,974	21,445
General and administrative	2,898	7,307	5,024	6,150
Total operating expenses	41,884	32,245	23,998	27,595
Loss from operations	(40,894)	(18,492)	(13,049)	(18,466)
Other income	29	1,675	1,340	261
Net loss and comprehensive loss	<u>\$ (40,865)</u>	<u>\$ (16,817)</u>	<u>\$ (11,709)</u>	<u>\$ (18,205)</u>
Net loss per share attributable to common stockholders, basic and diluted <sup>(1)</sup>	<u>\$ (3.35)</u>	<u>\$ (0.89)</u>	<u>\$ (0.62)</u>	<u>\$ (0.96)</u>
Weighted average shares of common stock outstanding, basic and diluted	<u>12,193,711</u>	<u>18,945,673</u>	<u>18,938,256</u>	<u>19,013,848</u>
Pro forma net loss per share of common stock attributable to common stockholders, basic and diluted <sup>(2)</sup>		<u>\$</u>		<u>\$</u>
Pro forma weighted average shares of common stock outstanding, basic and diluted <sup>(2)</sup>				

(1) See Note 16 and to our consolidated financial statements appearing elsewhere in this prospectus for details on the calculation of basic and diluted net loss per share.

(2) Pro forma basic and diluted net loss per share attributable to common stockholders have been prepared to give effect to the automatic conversion of all shares of preferred stock outstanding into shares of common stock as if the conversion had occurred on the later of the beginning of the period presented or the date the preferred shares were issued.



The following table sets forth summary balance sheet data as of September 30, 2020:

- on an actual basis;
- on a pro forma basis to give effect to (i) the acquisition of Amplify, which occurred on October 1, 2020, which includes the issuance of 7,863,094 shares of our Series A-2 preferred stock and 3,048,764 shares of common stock, the recognition of \$10.7 million of expense related to the write-off of acquired in-process research and development assets with no future alternative use, and the recognition of other assets acquired and liabilities assumed, (ii) the issuance of 85,806,214 shares of our Series B preferred stock which occurred on December 21, 2020 for net proceeds of \$116.4 million, and (iii) the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 169,396,576 shares of common stock immediately prior to the completion of this offering; and
- on a pro forma as adjusted basis to further give effect to our issuance and sale of \_\_\_\_\_ shares of common stock in this offering at an assumed initial public offering price of \$ \_\_\_\_\_ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	As of September 30, 2020		
	Actual	Pro Forma (in thousands)	Pro Forma as Adjusted(1)
<b>Consolidated Balance Sheet Data:</b>			
Cash and cash equivalents	\$ 55,860	\$ 175,781	\$
Total assets	60,764	180,586	
Working capital(2)	31,005	149,857	
Total Liabilities	60,397	61,367	
Redeemable convertible preferred stock	78,867	—	
Accumulated deficit	(85,288)	(95,977)	
Total stockholders' (deficit) equity	(78,500)	119,219	

- (1) A \$1.00 increase (decrease) in the assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, total assets, working capital and total stockholders' equity by \$ \_\_\_\_\_ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A 1.0 million share increase (decrease) in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, total assets, working capital and total stockholders' equity by \$ \_\_\_\_\_ million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. This information is illustrative only and will depend on the actual initial public offering price and other terms of this offering determined at pricing.
- (2) We define working capital as current assets less current liabilities.

## RISK FACTORS

*Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this prospectus, including our consolidated financial statements and the related notes and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” before deciding whether to invest in our common stock. The occurrence of any of the events or developments described below could harm our business, financial condition, results of operations and growth prospects. In such an event, the market price of our common stock could decline, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations.*

### **Risks Related to Our Limited Operating History, Financial Position, and Capital Requirements**

#### ***We are a targeted oncology company with a limited operating history.***

We commenced operations in 2016 and are a targeted oncology company with a limited operating history. Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. Since our inception, we have devoted substantially all of our efforts to organizing and staffing our company, acquiring intellectual property, business planning, raising capital, conducting discovery, research and development activities, and providing general and administrative support for these operations. We have no products approved for commercial sale and therefore have never generated any revenue from product sales, and we do not expect to in the foreseeable future. We have not obtained regulatory approvals for any of our product candidates, and there is no assurance that we will obtain approvals in the future. Our targeted oncology programs are still in preclinical development. We expect to continue to incur significant expenses and operating losses over the next several years and for the foreseeable future. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders’ deficit and working capital.

#### ***We have incurred significant net losses since our inception and anticipate that we will continue to incur losses for the foreseeable future.***

Our net losses were \$40.9 million and \$16.8 million for the years ended December 31, 2018 and 2019, respectively, and \$11.7 million and \$18.2 million for the nine months ended September 30, 2019 and 2020, respectively. We had an accumulated deficit of \$85.3 million as of September 30, 2020. Substantially all of our net losses have resulted from costs incurred in connection with our research and development programs and from general and administrative costs associated with our operations. We expect our research and development expenses to increase significantly in connection with the commencement and continuation of clinical trials of our product candidates. In addition, if we obtain regulatory approval for our product candidates, we will incur significant sales, marketing and manufacturing expenses. Once we are a public company, we will incur additional costs associated with operating as a public company. As a result, we expect to continue to incur significant and increasing operating losses for the foreseeable future. Because of the numerous risks and uncertainties associated with developing pharmaceutical products, we are unable to predict the extent of any future losses or when we will become profitable, if at all. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

The amount of our future losses is uncertain and our quarterly and annual operating results may fluctuate significantly or may fall below the expectations of investors or securities analysts, each of which may cause our stock price to fluctuate or decline. Our quarterly and annual operating results may fluctuate significantly in the future due to a variety of factors, many of which are outside of our control and may be difficult to predict, including the following:

- the timing and success or failure of clinical trials for our product candidates or competing product candidates, or any other change in the competitive landscape of our industry, including consolidation among our competitors or partners;

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- our ability to successfully open clinical trial sites and recruit and retain subjects for clinical trials, and any delays caused by difficulties in such efforts;
- our ability to obtain regulatory approval for our product candidates, and the timing and scope of any such approvals we may receive;
- the timing and cost of, and level of investment in, research and development activities relating to our product candidates, which may change from time to time;
- the cost of manufacturing our product candidates and products, should they receive regulatory approval, which may vary depending on the quantity of production and the terms of our agreements with manufacturers;
- our ability to attract, hire and retain qualified personnel;
- expenditures that we will or may incur to develop additional product candidates;
- the level of demand for our products should they receive regulatory approval, which may vary significantly;
- the risk/benefit profile, cost and reimbursement policies with respect to our product candidates, if approved, and existing and potential future therapeutics that compete with our product candidates;
- the changing and volatile U.S. and global economic environments, including as a result of the COVID-19 pandemic; and
- future accounting pronouncements or changes in our accounting policies.

The cumulative effects of these factors could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated guidance we may provide.

### ***We have no products approved for commercial sale and have not generated any revenue from product sales.***

Our ability to become profitable depends upon our ability to generate revenue. To date, we have generated minimal collaborative revenue from our product candidates and have not generated revenue from product sales, and we do not expect to generate any revenue from the sale of products in the near future. We do not expect to generate significant revenue unless and until we obtain regulatory approval of, and begin to sell, one or more of our product candidates. Our ability to generate revenue depends on a number of factors, including, but not limited to, our ability to:

- successfully complete our ongoing and planned preclinical studies for our targeted oncology and tumor microenvironment programs;
- timely file and the acceptance of our investigational new drug applications, or IND, for IK-930 and our other programs in order to commence our planned clinical trials or future clinical trials;
- successfully enroll subjects in, and complete, our ongoing and planned clinical trials;
- initiate and successfully complete all safety and efficacy studies required to obtain U.S. and foreign regulatory approval for our product candidates;
- establish commercial manufacturing capabilities or make arrangements with third-party manufacturers for clinical supply and commercial manufacturing;

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- obtain and maintain patent and trade secret protection or regulatory exclusivity for our product candidates;
- launch commercial sales of our products, if and when approved, whether alone or in collaboration with others;
- obtain and maintain acceptance of the products, if and when approved, by patients, the medical community and third-party payors;
- position our products to effectively compete with other therapies;
- obtain and maintain healthcare coverage and adequate reimbursement;
- enforce and defend intellectual property rights and claims;
- implement measures to help minimize the risk of COVID-19 to our employees as well as patients and subjects enrolled in our clinical trials; and
- maintain a continued acceptable safety profile of our products following approval.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize our product candidates, which would materially harm our business. If we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations.

***Even if we consummate this offering, we will need to raise substantial additional funding. If we are unable to raise capital when needed or on terms acceptable to us, we would be forced to delay, reduce or eliminate some of our product development programs or commercialization efforts.***

The development of pharmaceutical products is capital-intensive. We are currently advancing our targeted oncology programs through preclinical development. We plan to file an IND for IK-930 in the second half of 2021 and begin a Phase 1 clinical trial shortly thereafter. We also expect to begin IND-enabling studies for our extracellular signal-related kinase 5, or ERK5, RAS signaling program in the second half of 2021. We have three tumor microenvironment product candidates, of which IK-175 and IK-007 are in Phase 1 and Phase 1b clinical development, respectively. Additionally, we expect to submit an IND for our third tumor microenvironment program, IK-412, in the second half of 2021. Consequently, we expect our expenses to significantly increase in connection with our ongoing activities, particularly as we continue the research and development of, initiate and complete clinical trials of, and seek regulatory approval for, our product candidates. In addition, depending on the status of regulatory approval or, if we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. We may also need to raise additional funds sooner if we choose to pursue additional indications and/or geographies for our current or future product candidates or otherwise expand more rapidly than we presently anticipate. Furthermore, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate certain of our research and development programs or future commercialization efforts

We expect that the net proceeds from this offering, together with our existing cash and cash equivalents will be sufficient to fund our operations through at least . However, our future capital requirements will depend on and could increase significantly as a result of many factors, including:

- the scope, progress, results and costs of product discovery, preclinical and clinical development, laboratory testing and clinical trials for our product candidates;
- the potential additional expenses attributable to adjusting our development plans (including any supply related matters) to the COVID-19 pandemic;

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- the scope, prioritization and number of our research and development programs;
- the costs, timing and outcome of regulatory review of our product candidates;
- our ability to establish and maintain additional collaborations on favorable terms, if at all;
- the achievement of milestones or occurrence of other developments that trigger payments under our existing collaboration agreements or any additional collaboration agreements we may establish;
- the extent to which we are obligated to reimburse, or entitled to reimbursement of, clinical trial costs under future collaboration agreements, if any;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- the extent to which we acquire or in-license other product candidates and technologies;
- the costs of securing manufacturing arrangements for clinical and commercial production;
- costs related to the development of any companion diagnostics we may use in the future; and
- the costs of establishing or contracting for sales and marketing capabilities if we obtain regulatory approvals to market our product candidates.

Identifying potential product candidates and conducting preclinical development testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenue, if any, will be derived from sales of products that we do not expect to be commercially available for many years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. Disruptions in the financial markets in general and more recently due to the COVID-19 pandemic may make equity and debt financing more difficult to obtain and may have a material adverse effect on our ability to meet our fundraising needs. We cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all.

If we are unable to obtain funding on a timely basis or on acceptable terms, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of any product that has received regulatory approval or be unable to expand our operations or otherwise capitalize on our business opportunities as desired, which could materially affect our business, financial condition and results of operations.

***Raising additional capital may cause dilution to our stockholders, including purchasers of common stock in this offering, restrict our operations or require us to relinquish rights to our technologies or product candidates.***

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of private and public equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. We do not have any committed external source of funds. The terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. To the extent that we raise additional capital through the sale of common stock or securities convertible or exchangeable into common stock, your ownership interest will be diluted, and the terms of those securities may include liquidation or other preferences that may materially adversely affect your rights as a common stockholder. Debt financing, if available, would increase our fixed payment obligations and may involve

agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, acquiring, selling or licensing intellectual property rights, and making capital expenditures, declaring dividends or other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to meet certain milestones in connection with debt financing and the failure to achieve such milestones by certain dates may force us to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us which could have a material adverse effect on our business, operating results and prospects

We also could be required to seek funds through arrangements with additional collaborators or otherwise at an earlier stage than otherwise would be desirable. If we raise funds through additional collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our intellectual property, future revenue streams, research programs or product candidates, grant licenses on terms that may not be favorable to us or grant rights to develop and market our product candidates that we would otherwise prefer to develop and market ourselves, any of which may have a material adverse effect on our business, operating results and prospects.

#### **Risks Related to the Development of our Targeted Oncology and Other Programs and Product Candidates**

***The COVID-19 pandemic, or a similar pandemic, epidemic, or outbreak of an infectious disease, may materially and adversely affect our business and our financial results and could cause a disruption to the development of our product candidates.***

Public health crises such as pandemics or similar outbreaks could adversely impact our business. Recently, a novel strain of a virus named SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2), or coronavirus, which causes COVID-19 has spread to most countries across the world, including all 50 states within the U.S., including Boston, Massachusetts, where our primary office and laboratory space is located. The coronavirus pandemic is evolving, and has led to the implementation of various responses, including government-imposed quarantines, travel restrictions and other public health safety measures. The extent to which the coronavirus impacts our operations or those of our third party partners, including our preclinical studies or clinical trial operations, will depend on future developments, which are highly uncertain and cannot be predicted with confidence, including the duration of the outbreak, new information that will emerge concerning the severity of the coronavirus and the actions to contain the coronavirus or treat its impact, among others. The continued spread of COVID-19 globally could adversely impact our preclinical or clinical trial operations in the U.S., including our ability to recruit and retain patients and principal investigators and site staff who, as healthcare providers, may have heightened exposure to COVID-19 if an outbreak occurs in their geography. For example, similar to other biopharmaceutical companies, we may experience delays in initiating IND-enabling studies, protocol deviations, enrolling our clinical trials, or dosing of patients in our clinical trials as well as in activating new trial sites. COVID-19 may also affect employees of third-party CROs located in affected geographies that we rely upon to carry out our clinical trials. In addition, as a result of medical complications associated with microsatellite stable colorectal cancer, or MSS CRC., the patient populations that our most advanced and other product candidates target may be particularly susceptible to COVID-19, which may make it more difficult for us to identify patients able to enroll in our current and future clinical trials and may impact the ability of enrolled patients to complete any such trials. Any negative impact COVID-19 has to patient enrollment or treatment or the execution of our product candidates could cause costly delays to clinical trial activities, which could adversely affect our ability to obtain regulatory approval for and to commercialize our product candidates, increase our operating expenses, and have a material adverse effect on our financial results.

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Additionally, timely enrollment in planned clinical trials is dependent upon clinical trial sites which could be adversely affected by global health matters, such as pandemics. We plan to conduct clinical trials for our product candidates in geographies which are currently being affected by the COVID-19 pandemic. Some factors from the COVID-19 pandemic that will delay or otherwise adversely affect enrollment in the clinical trials of our product candidates, as well as our business generally, include:

- the potential diversion of healthcare resources away from the conduct of clinical trials to focus on pandemic concerns, including the attention of physicians serving as our clinical trial investigators, hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our prospective clinical trials;
- limitations on travel that could interrupt key trial and business activities, such as clinical trial site initiations and monitoring, domestic and international travel by employees, contractors or patients to clinical trial sites, including any government-imposed travel restrictions or quarantines that will impact the ability or willingness of patients, employees or contractors to travel to our clinical trial sites or secure visas or entry permissions, a loss of face-to-face meetings and other interactions with potential partners, any of which could delay or adversely impact the conduct or progress of our prospective clinical trials;
- the potential negative affect on the operations of our third-party manufacturers;
- interruption in global shipping affecting the transport of clinical trial materials, such as patient samples, investigational drug product and conditioning drugs and other supplies used in our prospective clinical trials;
- business disruptions caused by potential workplace, laboratory and office closures and an increased reliance on employees working from home, disruptions to or delays in ongoing laboratory experiments;
- operations, staffing shortages, travel limitations or mass transit disruptions, any of which could adversely impact our business operations or delay necessary interactions with local regulators, ethics committees and other important agencies and contractors;
- changes in local regulations as part of a response to the COVID-19 pandemic, which may require us to change the ways in which our clinical trials are conducted, which may result in unexpected costs, or to discontinue such clinical trials altogether; and
- interruption or delays in the operations of the FDA or other regulatory authorities, which may impact review and approval timelines.

We have taken temporary precautionary measures intended to help minimize the risk of the virus to our employees, including temporarily requiring certain of our employees to work remotely, suspending all non-essential travel worldwide for our employees and discouraging employee attendance at industry events and in-person work-related meetings, which could negatively affect our business. We cannot presently predict the scope and severity of the planned and potential shutdowns or disruptions of businesses and government agencies, such as the Securities and Exchange Commission, or the SEC, or FDA.

These and other factors arising from COVID-19 could worsen in countries that are already afflicted with COVID-19 or could continue to spread to additional countries. Any of these factors, and other factors related to any such disruptions that are unforeseen, could have a material adverse effect on our business and our results of operation and financial condition. Further, uncertainty around these and related issues could lead to adverse effects on the economy of the United States and other economies, which could impact our ability to raise the necessary capital needed to develop and commercialize our programs and product candidates.

***We have never successfully completed any clinical trials for our oncology programs, and we may be unable to do so for any product candidates we develop. Certain of our oncology programs are still in preclinical development and may never advance to clinical development.***

We have not yet demonstrated our ability to successfully complete clinical trials, including large-scale, pivotal clinical trials, obtain regulatory approvals, manufacture a commercial scale product, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful commercialization. Our targeted oncology programs are still in preclinical development and may never advance to clinical development. We plan to file an IND for our IK-930 program in the second half of 2021 and expect to begin a Phase 1 clinical trial shortly thereafter. We expect to begin IND-enabling studies for our ERK5 RAS signaling program in the second half of 2021. Additionally, we expect to submit an IND for our third tumor microenvironment program, IK-412, in the second half of 2021. We may not be able to file such IND or INDs for any of our other product candidates on the timelines we expect, if at all. Moreover, we cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that require us to suspend or terminate clinical trials. Commencing each of these clinical trials is subject to finalizing the trial design based on discussions with the FDA and other regulatory authorities. Any guidance we receive from the FDA or other regulatory authorities is subject to change. These regulatory authorities could change their position, including on the acceptability of our trial designs or the clinical endpoints selected, which may require us to complete additional clinical trials or result in the composition of stricter approval conditions than we currently expect. Successful completion of our clinical trials is a prerequisite to submitting a new drug application, or NDA, or a biologics license application, or BLA, to the FDA, a Marketing Authorization Application, or MAA, to the European Medicines Agency, or EMA, or other marketing applications to regulatory authorities in other jurisdictions, for each product candidate and, consequently, the regulatory approval of each product candidate. We currently only have two product candidates from our tumor microenvironment program in clinical development. We are conducting a Phase 1 trial with IK-175 in patients with bladder cancer with activated aryl hydrocarbon receptor, or AHR, and a Phase 1b trial with IK-007 in combination with pembrolizumab for the treatment of patients with advanced or progressive microsatellite stable colorectal cancer, or MSS CRC. However, we do not know whether these or any of our future clinical trials will begin on time or be completed on schedule, if at all.

If we are required to conduct additional preclinical studies or clinical trials or other testing of our product candidates beyond those that we currently contemplate, if we are unable to successfully complete clinical trials of our product candidates or other testing, if the results of these trials or tests are not positive or are only modestly positive or if there are safety concerns, we may:

- be delayed in obtaining regulatory approval for our product candidates;
- not obtain regulatory approval at all;
- obtain regulatory approval for indications or patient populations that are not as broad as intended or desired;
- continue to be subject to post-marketing testing requirements; or
- experience having the product removed from the market after obtaining regulatory approval.

***Our programs are focused on the development of oncology therapeutics for patients with genetically defined or biomarker-driven cancers, which is a rapidly evolving area of science, and the approach we are taking to discover and develop drugs is novel and may never lead to approved or marketable products.***

The discovery and development of oncology therapeutics for patients with genetically defined or biomarker-driven cancers is an emerging field, and the scientific discoveries that form the basis for our efforts to discover and develop product candidates are relatively new. The scientific evidence to support the feasibility of developing product candidates based on these discoveries is both preliminary and limited. Although we believe, based on our preclinical work, that the genetic alterations targeted by our programs drive the formation and



spread of cancer, clinical results may not confirm this hypothesis or may only confirm it for certain alterations or certain tumor types. The patient populations for our product candidates are limited to those with specific target alterations and may not be completely defined but are substantially smaller than the general treated cancer population, and we will need to screen and identify these patients with targeted alterations. Successful identification of patients is dependent on several factors, including achieving certainty as to how specific alterations respond to our product candidates and the ability to identify such alterations. Furthermore, even if we are successful in identifying patients with specific target alterations, we cannot be certain that the resulting patient populations for each mutation will be large enough to allow us to successfully obtain approval for each mutation type and commercialize our product candidates and achieve profitability.

***Clinical product development involves a lengthy and expensive process, with an uncertain outcome.***

Our preclinical studies and future and ongoing clinical trials may not be successful. Currently, all our targeted oncology programs are in preclinical development. It is impossible to predict when or if any of our product candidates will prove effective and safe in humans or will receive regulatory approval. Before obtaining regulatory approval from regulatory authorities for the sale of any product candidate, we must complete preclinical studies and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. Clinical testing is expensive, difficult to design and implement, can take many years to complete and outcomes are uncertain. A failure of one or more clinical trials can occur at any stage of testing. The outcome of preclinical development testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain regulatory approval of their product candidates. Our preclinical studies and future and ongoing clinical trials may not be successful.

***If we are unable to successfully validate, develop and obtain regulatory approval for companion diagnostic tests for our product candidates that require or would commercially benefit from such tests, or experience significant delays in doing so, we may not realize the full commercial potential of these product candidate.***

In connection with the clinical development of our product candidates for certain indications, we may engage third parties to develop or otherwise obtain access to *in vitro* companion diagnostic tests to identify patient subsets within a disease category who may derive selective and meaningful benefit from our product candidates. Such companion diagnostics would be used during our clinical trials as well as in connection with the commercialization of our products that receive regulatory approval. To be successful, we or our collaborators will need to address a number of scientific, technical, regulatory and logistical challenges. The FDA and comparable foreign regulatory authorities regulate *in vitro* companion diagnostics as medical devices and, under that regulatory framework, will likely require the conduct of clinical trials to demonstrate the safety and effectiveness of any diagnostics we may develop, which we expect will require separate regulatory clearance or approval prior to commercialization.

We intend to rely on third parties for the design, development and manufacture of companion diagnostic tests for our therapeutic product candidates that may require such tests. If we enter into such collaborative agreements, we will be dependent on the sustained cooperation and effort of our future collaborators in developing and obtaining approval for these companion diagnostics. It may be necessary to resolve issues such as selectivity/specificity, analytical validation, reproducibility, or clinical validation of companion diagnostics during the development and regulatory approval processes. Moreover, even if data from preclinical studies and early clinical trials appear to support development of a companion diagnostic for a product candidate, data generated in later clinical trials may fail to support the analytical and clinical validation of the companion diagnostic. We and our future collaborators may encounter difficulties in developing, obtaining regulatory approval for, manufacturing and commercializing companion diagnostics similar to those we face with respect to our therapeutic product candidates themselves, including issues with achieving regulatory clearance or approval, production of sufficient

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quantities at commercial scale and with appropriate quality standards, and in gaining market acceptance. If we are unable to successfully develop companion diagnostics for these therapeutic product candidates, or experience delays in doing so, the development of these therapeutic product candidates may be adversely affected, these therapeutic product candidates may not obtain regulatory approval, and we may not realize the full commercial potential of any of these therapeutic products that obtain regulatory approval. As a result, our business, results of operations and financial condition could be materially harmed. In addition, a diagnostic company with whom we contract may decide to discontinue selling or manufacturing the companion diagnostic test that we anticipate using in connection with development and commercialization of our product candidates or our relationship with such diagnostic company may otherwise terminate. We may not be able to enter into arrangements with another diagnostic company to obtain supplies of an alternative diagnostic test for use in connection with the development and commercialization of our product candidates or do so on commercially reasonable terms, which could adversely affect and/or delay the development or commercialization of our therapeutic product candidates.

***Interim, top-line, and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to confirmation, audit and verification procedures that could result in material changes in the final data.***

From time to time, we may publicly disclose interim, top-line or preliminary data from our clinical trials, which is based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the interim, top-line or preliminary results that we report may differ from future results of the same trials, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Interim data from clinical trials are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Preliminary, interim or top-line data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary top-line data we previously published. As a result, preliminary, interim and top-line data should be viewed with caution until the final data are available. Adverse differences between preliminary or interim data and final data could significantly harm our business prospects and may cause the price of our common stock to fluctuate or decline.

Further, regulatory agencies and others, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could adversely impact the potential of the particular program, the likelihood of obtaining regulatory approval of the particular product candidate, commercialization of any approved product and the business prospects of our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is derived from information that is typically extensive, and you or others may not agree with what we determine is material or otherwise appropriate information to include in our disclosure.

If the preliminary, interim or top-line data that we report differ from actual results, or if regulatory authorities or others, disagree with the conclusions reached, our ability to obtain approval for, and commercialize, our product candidates may be significantly impaired, which could materially harm our business, operating results, prospects or financial condition.

***We may incur additional costs or experience delays in initiating or completing, or ultimately be unable to complete, the development and commercialization of our product candidates.***

We may experience delays in initiating or completing our preclinical studies or clinical trials, including as a result of delays in obtaining, or failure to obtain, the FDA's clearance to initiate clinical trials under future INDs. Additionally, we cannot be certain that preclinical studies or clinical trials for our product candidates will not require redesign, will enroll an adequate number of subjects on time, or will be completed on schedule, if at all. We may experience numerous unforeseen events during, or as a result of, preclinical studies and clinical trials

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that could delay or prevent our ability to receive regulatory approval or commercialize our product candidates, including:

- we may receive feedback from regulatory authorities that require us to modify the design or implementation of our preclinical studies or clinical trials or to delay or terminate a clinical trial;
- regulators or institutional review boards, or IRBs, or ethics committees may delay or may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- we may experience delays in reaching, or fail to reach, agreement on acceptable terms with prospective trial sites and prospective clinical research organizations, or CROs, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- preclinical studies or clinical trials of our product candidates may fail to show safety or efficacy or otherwise produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional preclinical studies or clinical trials, or we may decide to abandon product research or development programs;
- preclinical studies or clinical trials of our product candidates may not produce differentiated or clinically significant results across tumor types or indications;
- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of these clinical trials or fail to return for post-treatment follow-up at a higher rate than we anticipate;
- our third party contractors may fail to comply with regulatory requirements, fail to maintain adequate quality controls, be unable to provide us with sufficient product supply to conduct or complete preclinical studies or clinical trials, fail to meet their contractual obligations to us in a timely manner, or at all, or may deviate from the clinical trial protocol or drop out of the trial, which may require that we add new clinical trial sites or investigators;
- we may elect to, or regulators or IRBs or ethics committees may require us or our investigators to, suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or a finding that the participants in our clinical trials are being exposed to unacceptable health risks;
- the cost of clinical trials of our product candidates may be greater than we anticipate;
- clinical trials of our product candidates may be delayed due to complications associated with the evolving COVID-19 pandemic;
- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate;
- our product candidates may have undesirable side effects or other unexpected characteristics, causing us or our investigators, regulators or IRBs or ethics committees to suspend or terminate the trials, or reports may arise from preclinical or clinical testing of other cancer therapies that raise safety or efficacy concerns about our product candidates; and
- regulators may revise the requirements for approving our product candidates, or such requirements may not be as we anticipate

We could encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions at which such trials are being conducted, by the Data Safety Monitoring Board, or DSMB, for such trial or by the FDA or other regulatory authorities. Such authorities may impose such a suspension or termination or clinical hold due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, adverse findings upon an inspection of the clinical trial operations or trial

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site by the FDA or other regulatory authorities, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a product, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. Many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates. Further, the FDA may disagree with our clinical trial design or our interpretation of data from clinical trials or may change the requirements for approval even after it has reviewed and commented on the design for our clinical trials.

Moreover, principal investigators for our current and future clinical trials may serve as scientific advisors or consultants to us from time to time and receive compensation in connection with such services. Under certain circumstances, we may be required to report some of these relationships to the FDA or comparable foreign regulatory authorities. The FDA or comparable foreign regulatory authority may conclude that a financial relationship between us and a principal investigator has created a conflict of interest or otherwise affected the interpretation of the study. The FDA or comparable foreign regulatory authority may therefore question the integrity of the data generated at the applicable clinical trial site, and the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA or comparable foreign regulatory authority, as the case may be, and may ultimately lead to the denial of regulatory approval of one or more of our product candidates.

Our product development costs will also increase if we experience delays in testing or regulatory approvals. We do not know whether any of our future clinical trials will begin as planned, or whether any of our current or future clinical trials will need to be restructured or will be completed on schedule, if at all. Significant preclinical study or clinical trial delays, including those caused by the COVID-19 pandemic, also could shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do, which would impair our ability to successfully commercialize our product candidates and may significantly harm our business, operating results, financial condition and prospects.

### ***If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.***

We may not be able to initiate or continue clinical trials for our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or comparable foreign regulatory authorities, or as needed to provide appropriate statistical power for a given trial. In particular, because we are focused on patients with specific genetic mutations for the development of our targeted oncology programs, and on patients with specific biomarkers for the development of our tumor microenvironment programs, our ability to enroll eligible patients may be limited or may result in slower enrollment than we anticipate.

We may experience difficulties with identifying specific patient populations for any biomarker-defined trial cohorts. The patient eligibility criteria defined in our trial protocols, including biomarker-driven identification may limit the patient populations eligible for our clinical trials to a greater extent than competing clinical trials for the same indication that do not have biomarker-driven patient eligibility criteria. We will also rely on the willingness and ability of clinicians to screen their patients for biomarkers to indicate which patients may be eligible for enrollment in our clinical trials.

In addition, some of our competitors have ongoing clinical trials for product candidates that treat the same indications as do our product candidates, and patients who would otherwise be eligible for our clinical trials may choose instead to enroll in clinical trials of our competitors' product candidates. Furthermore, our ability to enroll patients may be significantly delayed by the evolving COVID-19 pandemic, and we cannot accurately predict the extent and scope of such delays at this point.

In addition to the competitive trial environment, the eligibility criteria of our planned clinical trials will further limit the pool of available study participants as we will require that patients have specific characteristics that we

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can measure to assure their cancer is either severe enough or not too advanced to include them in a study. Additionally, the process of finding patients may prove costly. We also may not be able to identify, recruit or enroll a sufficient number of patients to complete our clinical studies because of the perceived risks and benefits of the product candidates under study, the availability and efficacy of competing therapies and clinical trials, the proximity and availability of clinical trial sites for prospective patients, and the patient referral practices of physicians. If patients are unwilling to participate in our studies for any reason, the timeline for recruiting patients, conducting studies and obtaining regulatory approval of potential products may be delayed.

We may also engage third parties to develop companion diagnostics for use in our clinical trials, but such third parties may not be successful in developing such companion diagnostics, limiting our ability to identify patients with the targeted genetic mutations for our clinical trials. Further, if we are required to develop companion diagnostics and are unable to include patients with the targeted genetic mutations, this could compromise our ability to seek participation in the FDA's expedited review and development programs, including Breakthrough Therapy Designation and Fast Track Designation, or otherwise seek to accelerate clinical development and regulatory timelines. Patient enrollment may be affected by other factors, including:

- the severity of the disease under investigation;
- the efforts to obtain and maintain patient consents and facilitate timely enrollment in clinical trials;
- the ability to monitor patients adequately during and after treatment;
- the risk that patients enrolled in clinical trials will drop out of the clinical trials before clinical trial completion;
- the ability to recruit clinical trial investigators with the appropriate competencies and experience;
- reporting of the preliminary results of any of our clinical trials; and
- factors we may not be able to control, including the impacts of the COVID-19 pandemic, that may limit patients, principal investigators or staff or clinical site availability.

***We anticipate that certain of our current product candidates and future product candidates will be used in combination with third-party drugs or biologics, some of which are still in development, and we have limited or no control over the supply, regulatory status, or regulatory approval of such drugs or biologics.***

Certain of our current product candidates and any future product candidates have the potential to be administered in combination with checkpoint inhibitor immunotherapies or other standards of care like chemotherapies, targeted therapies or radiotherapy. For example, we plan to explore combinations of IK-930 in combination with epidermal growth factor receptor, or EGFR, inhibitors in certain indications and to evaluate IK-175 and IK-412 in combination with nivolumab, which is marketed by Bristol-Myers Squibb Company, or BMS. We are also currently conducting a Phase 1b clinical trial of IK-007 in combination with pembrolizumab, which is marketed by Merck. Our ability to develop and ultimately commercialize our current programs and product candidates and any future programs or product candidates used in combination with EGFR inhibitors, nivolumab, pembrolizumab, or other checkpoint inhibitor immunotherapies will depend on our ability to access such drugs or biologics on commercially reasonable terms for the clinical trials and their availability for use with our commercialized product, if approved. We cannot be certain that current or potential future commercial relationships will provide us with a steady supply of such drugs or biologics on commercially reasonable terms or at all.

Any failure to maintain or enter into new successful commercial relationships, or the expense of purchasing checkpoint inhibitor immunotherapies or other comparator therapies in the market, may delay our development timelines, increase our costs and jeopardize our ability to develop our current product candidates and any future product candidates as commercially viable therapies. If any of these occur, our business, financial condition, operating results, stock price and prospects may be materially harmed.

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Moreover, the development of product candidates for use in combination with another product or product candidate may present challenges that are not faced for single agent product candidates. The FDA or comparable foreign regulatory authorities may require us to use more complex clinical trial designs in order to evaluate the contribution of each product and product candidate to any observed effects. It is possible that the results of such trials could show that any positive previous trial results are attributable to the combination therapy and not our current product candidates and any future product candidates. Moreover, following product approval, the FDA or comparable foreign regulatory authorities may require that products used in conjunction with each other be cross labeled for combined use. To the extent that we do not have rights to the other product, this may require us to work with a third party to satisfy such a requirement. Moreover, developments related to the other product may impact our clinical trials for the combination as well as our commercial prospects should we receive regulatory approval. Such developments may include changes to the other product's safety or efficacy profile, changes to the availability of the other product, quality, manufacturing and supply issues with respect to the other product, and changes to the standard of care.

In the event that BMS, Merck or any future collaborator or supplier cannot continue to supply their products on commercially reasonable terms, we would need to identify alternatives for accessing checkpoint inhibitor immunotherapies. Additionally, should the supply of products from any current or future collaborator or supplier be interrupted, delayed or otherwise be unavailable to us, our clinical trials may be delayed. In the event we are unable to source an alternative supply, or are unable to do so on commercially reasonable terms, our business, financial condition, operating results, stock price and prospects may be materially harmed.

***Results from early preclinical studies and clinical trials of our programs and product candidates are not necessarily predictive of the results of later preclinical studies and clinical trials of our programs and product candidates. If we cannot replicate the results from our earlier preclinical studies and clinical trials of our programs and product candidates in our later preclinical studies and clinical trials, we may be unable to successfully develop, obtain regulatory approval for and commercialize our product candidates.***

Any results from our early preclinical studies and clinical trials of our targeted oncology and tumor microenvironment programs or our product candidates may not necessarily be predictive of the results from later preclinical studies and clinical trials. Similarly, even if we are able to complete our planned preclinical studies and clinical trials of our product candidates according to our current development timeline, the results from such preclinical studies and clinical trials of our product candidates may not be replicated in subsequent preclinical studies or clinical trial results.

Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials after achieving positive results in early-stage development, and we cannot be certain that we will not face similar setbacks. These setbacks have been caused by, among other things, preclinical and other nonclinical findings made while clinical trials were underway, or safety or efficacy observations made in preclinical studies and clinical trials, including previously unreported adverse events. Moreover, preclinical, nonclinical and clinical data are often susceptible to varying interpretations and analyses and many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials nonetheless failed to obtain regulatory approval.

***We may not be able to file INDs for our targeted oncology and other programs to commence clinical trials on the timelines we expect, and even if we are able to, the FDA may not permit us to proceed.***

For our targeted oncology program, we expect to file an IND for IK-930 and IK-412 in the second half of 2021 and to initiate IND-enabling studies for our ERK5 program in the second half of 2022. However, we may not be able to file such INDs or INDs for future product candidates for our targeted oncology or other programs on the timelines we expect. For example, we may experience manufacturing delays or other delays with IND-enabling studies. Moreover, we cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that suspend or terminate clinical trials. Additionally, even if the FDA agrees with the design and implementation of the clinical trials set forth in an IND, we cannot guarantee

that it will not change its requirements in the future. These considerations also apply to new clinical trials we may submit as amendments to existing INDs or to a new IND. Any failure to file INDs on the timelines we expect or to obtain regulatory approvals for our planned clinical trials may prevent us from initiating or completing our clinical trials or commercializing our product candidates on a timely basis, if at all.

***Our clinical trials or those of our current or future collaborators may reveal significant adverse events not seen in our preclinical or nonclinical studies and may result in a safety profile that could inhibit regulatory approval or market acceptance of any of our product candidates.***

Before obtaining regulatory approvals for the commercial sale of any products, we must demonstrate through lengthy, complex and expensive preclinical studies and clinical trials that our product candidates are both safe and effective for use in each target indication. Clinical testing is expensive and can take many years to complete, and outcomes are inherently uncertain. Failure can occur at any time during the clinical trial process. Because our targeted oncology programs and our product candidates are in an early stage of development, there is a high risk of failure, and we may never succeed in developing marketable products. There is typically an extremely high rate of attrition from the failure of product candidates proceeding through clinical trials. Product candidates in later stages of clinical trials also may fail to show the desired safety and efficacy profile despite having progressed through nonclinical studies and initial clinical trials. For example, we conducted a second open-label single arm Phase 1b clinical trial of IK-007 in combination with pembrolizumab in patients with advanced or metastatic post anti-PD- 1/L1 treatment in non-small-cell lung carcinoma, or NSCLC, but based on the combined data generated in the interim period for efficacy and safety, we decided not to further explore this combination in NSCLC and terminated this clinical trial in December 2020. If the results of our ongoing or future preclinical studies and clinical trials are inconclusive with respect to the safety and efficacy of our product candidates, if we do not meet the clinical endpoints with statistical and clinically meaningful significance, or if there are safety concerns associated with our product candidates, we may be prevented from, or delayed in, obtaining regulatory approval for such product candidates. In some instances, there can be significant variability in safety or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in trial procedures set forth in protocols, differences in the size and type of the patient populations, changes in and adherence to the clinical trial protocols and the rate of dropout among clinical trial participants. While we have not yet initiated clinical trials for our targeted oncology programs and are in early stages of clinical trials for IK-175 and IK-007, our tumor microenvironment programs, it is likely, as is the case with many oncology therapies, that there may be side effects associated with their use. Results of our trials could reveal a high and unacceptable severity and prevalence of side effects. In such an event, our trials could be suspended or terminated, and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our product candidates for any or all targeted indications. Treatment-related side effects could also affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims.

Further, our product candidates could cause undesirable side effects in clinical trials related to on-target toxicity. If on-target toxicity is observed, or if our product candidates have characteristics that are unexpected, we may need to abandon their development or limit development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. In addition, our product candidates could cause undesirable side effects that we have not yet observed. Many compounds that initially showed promise in early stage testing for treating cancer have later been found to cause side effects that prevented further development of the compound. Most product candidates that commence clinical trials are never approved as products, and there can be no assurance that any of our current or future clinical trials will ultimately be successful or support further clinical development or regulatory approval of any of our product candidates.

We may develop future product candidates, in combination with one or more cancer therapies. The uncertainty resulting from the use of our product candidates in combination with other cancer therapies may make it difficult to accurately predict side effects in future clinical trials. As is the case with many treatments for cancer and rare diseases, it is likely that there may be side effects associated with the use of our product candidates. If significant

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adverse events or other side effects are observed in any of our current or future clinical trials, we may have difficulty recruiting patients to our clinical trials, patients may drop out of our trials, or we may be required to abandon the trials or our development efforts of one or more product candidates altogether. We, the FDA or other applicable regulatory authorities, or an IRB may suspend or terminate clinical trials of a product candidate at any time for various reasons, including a belief that subjects in such trials are being exposed to unacceptable health risks or adverse side effects. Some potential therapeutics developed in the biotechnology industry that initially showed therapeutic promise in early-stage trials have later been found to cause side effects that prevented their further development. Even if the side effects do not preclude the product from obtaining or maintaining regulatory approval, undesirable side effects may inhibit market acceptance of the approved product due to its tolerability versus other therapies. Any of these developments could materially harm our business, operating results, financial condition and prospects.

***Some of our product candidates modulate pathways for which there are currently no approved or effective therapies, and utilize novel binding locations, which may result in greater research and development expenses, regulatory issues that could delay or prevent approval, or discovery of unknown or unanticipated adverse effects.***

Some of our product candidates modulate pathway for which there are currently no approved or effective therapies, which may result in uncertainty. We select programs for cancer driver targets based on compelling biological rationale. We explore new programs based on extensive preclinical data analysis which sometimes cannot predict efficacy or safety in humans.

Some of our product candidates utilize novel binding locations, which may result in greater research and development expenses, regulatory issues that could delay or prevent approval, or discovery of unknown or unanticipated adverse effects. We utilize structural biology in tight integration with our medicinal chemistry and biology capabilities to predict and design the compounds that will achieve the most desirable characteristics, including potency, selectivity, bioavailability, and drug-like properties. A disruption in any of these capabilities may have significant adverse effects in our ability to expand our pipeline of product candidates, and we cannot predict whether we will continue to have access to these capabilities in the future to support our pipeline development. In addition, there can be no assurance that we will be able to rapidly identify, design and synthesize the necessary compounds or that these or other problems related to the development of product candidates will not arise in the future, which may cause significant delays or we raise problems we may not be able to resolve.

Regulatory approval of novel product candidates such as ours can be more expensive, riskier and take longer than for other, more well-known or extensively studied pharmaceutical or biopharmaceutical product candidates due to our and regulatory agencies' lack of experience with them. The novelty of the mechanism of action of any of our product candidates may lengthen the regulatory review process, require us to conduct additional studies or clinical trials, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our product candidates or lead to significant post-approval limitations or restrictions. The novel mechanism of action also means that fewer people are trained in or experienced with product candidates of this type, which may make it more difficult to find, hire and retain personnel for research, development and manufacturing positions. If our inhibitors utilize a novel mechanism of action that has not been the subject of extensive study compared to more well-known product candidates, there is also an increased risk that we may discover previously unknown or unanticipated adverse effects during our preclinical studies and clinical trials. Any such events could adversely impact our business prospects, operating results and financial condition.

***We may in the future conduct clinical trials for our product candidates outside the United States, and the FDA and comparable foreign regulatory authorities may not accept data from such trials.***

We may in the future choose to conduct additional clinical trials outside the United States, including in Europe, Australia or other foreign jurisdictions. The acceptance of trial data from clinical trials conducted outside the



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United States by the FDA may be subject to certain conditions. In cases where data from clinical trials conducted outside the United States are intended to serve as the sole basis for regulatory approval in the United States, the FDA will generally not approve the application on the basis of foreign data alone unless (i) the data are applicable to the United States population and United States medical practices, (ii) the trials were performed by clinical investigators of recognized competence and (iii) the data may be considered valid without the need for an on-site inspection by the FDA or, if the FDA considers such an inspection to be necessary, the FDA is able to validate the data through an on-site inspection or other appropriate means. Additionally, the FDA's clinical trial requirements, including sufficient size of patient populations and statistical powering, must be met. Many foreign regulatory bodies have similar approval requirements. In addition, such foreign trials would be subject to the applicable local laws of the foreign jurisdictions where the trials are conducted. There can be no assurance that the FDA or any comparable foreign regulatory authority will accept data from trials conducted outside of the United States or the applicable jurisdiction. If the FDA or any comparable foreign regulatory authority does not accept such data, it would result in the need for additional trials, which would be costly and time-consuming and delay aspects of our business plan, and which may result in our product candidates not receiving regulatory approval or clearance for commercialization in the applicable jurisdiction.

***Although we intend to explore other therapeutic opportunities in addition to the programs and product candidates that we are currently developing, we may fail to identify viable new product candidates for clinical development for a number of reasons. If we fail to identify additional product candidates, our business could be materially harmed.***

Research programs to pursue the development of our existing and planned product candidates for additional indications and to identify new product candidates and disease targets require substantial technical, financial and human resources whether or not they are ultimately successful. Our research programs may initially show promise in identifying potential indications and/or product candidates, yet fail to yield results for clinical development for a number of reasons, including:

- the research methodology used may not be successful in identifying potential indications and/or product candidates;
- potential product candidates may, after further study, be shown to have harmful adverse effects or other characteristics that indicate they are unlikely to be effective products; or
- it may take greater human and financial resources than we will possess to identify additional therapeutic opportunities for our product candidates or to develop suitable potential product candidates through internal research programs, thereby limiting our ability to develop, diversify and expand our product portfolio.

Because we have limited financial and human resources, we intend to initially focus on research programs and product candidates for a limited set of indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential or a greater likelihood of success. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities.

Accordingly, there can be no assurance that we will ever be able to identify additional therapeutic opportunities for our product candidates or to develop suitable product candidates through internal research programs, which could materially adversely affect our future growth and prospects. We may focus our efforts and resources on potential product candidates or other potential programs that ultimately prove to be unsuccessful.

***If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals for our product candidates, we will not be able to commercialize, or will be delayed in commercializing, our product candidates, and our ability to generate revenue will be materially impaired.***

Our product candidates and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising,

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promotion, sale, distribution, import and export are subject to comprehensive regulation by the FDA and other regulatory agencies in the United States and by comparable foreign regulatory authorities. Before we can commercialize any of our product candidates, we must obtain regulatory approval. Currently, all of our product candidates are in discovery, preclinical or clinical development, and we have not received approval to market any of our product candidates from regulatory authorities in any jurisdiction. It is possible that our product candidates, including any product candidates we may seek to develop in the future, will never obtain regulatory approval. We have limited experience in filing and supporting the applications necessary to gain regulatory approvals and expect to rely on third-party CROs and/or regulatory consultants to assist us in this process. Securing regulatory approval requires the submission of extensive preclinical and clinical data and supporting information to the various regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy. Securing regulatory approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the relevant regulatory authority. Our product candidates may not be effective, may be only moderately effective or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our obtaining regulatory approval or prevent or limit commercial use. In addition, regulatory authorities may find fault with our manufacturing process or facilities or that of third-party contract manufacturers. We may also face greater than expected difficulty in manufacturing our product candidates.

The process of obtaining regulatory approvals, both in the United States and abroad, is expensive and often takes many years. If the FDA or a comparable foreign regulatory authority requires that we perform additional preclinical studies or clinical trials, approval may be delayed, if obtained at all. The length of such a delay varies substantially based upon a variety of factors, including the type, complexity and novelty of the product candidate involved. Changes in regulatory approval policies during the development period, changes in or enactment of additional statutes or regulations, or changes in regulatory review policies for each submitted NDA, BLA, premarket approval application, or PMA, or equivalent application types, may cause delays in the approval or rejection of an application. The FDA and comparable foreign regulatory authorities have substantial discretion in the approval process and may refuse to accept any application or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. Our product candidates could be delayed in receiving, or fail to receive, regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may not be able to enroll a sufficient number of patients in our clinical studies;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for its proposed indication or a related companion diagnostic is suitable to identify appropriate patient populations;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of an NDA, BLA or other submission or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may find deficiencies with or fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; and

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- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change such that our clinical data are insufficient for approval.

Even if we were to obtain regulatory approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request, thereby narrowing the commercial potential of the product candidate. In addition, regulatory authorities may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

If we experience delays in obtaining, or if we fail to obtain, approval of our product candidates, the commercial prospects for our product candidates may be harmed and our ability to generate revenue will be materially impaired.

### **Risks Related to Commercialization**

***We face substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than we do.***

The development and commercialization of new products in the biopharmaceutical and related industries is highly competitive. We compete in the segments of the pharmaceutical, biotechnology, and other related markets that address structural biology-guided chemistry-based drug design to develop therapies in the fields of cancer and genetic diseases. There are other companies focusing on targeted oncology to develop therapies in the fields of cancer and other diseases. We also compete more broadly across the market for cost-effective and reimbursable cancer treatments. Some of these competitive products and therapies are based on scientific approaches that are the same as or similar to our approach, and others are based on entirely different approaches. These companies include divisions of large pharmaceutical companies and biotechnology companies of various sizes. We face competition with respect to our current product candidates, and will face competition with respect to any product candidates that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

Any product candidates that we successfully develop and commercialize will compete with currently approved therapies and new therapies that may become available in the future from segments of the pharmaceutical, biotechnology and other related markets. Key product features that would affect our ability to effectively compete with other therapeutics include the efficacy, safety and convenience of our products. We believe principal competitive factors to our business include, among other things, our ability to identify biomarkers, ability to successfully transition research programs into clinical development, ability to raise capital, and the scalability of the platform, pipeline, and business.

Many of the companies that we compete against or which we may compete against in the future have significantly greater financial resources and expertise in research and development, manufacturing, preclinical and clinical testing, obtaining regulatory approvals and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical, biotechnology and diagnostic industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. If these or other barriers to entry do not remain in place, other companies may be able to more directly or effectively compete with us.

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Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we or our collaborators may develop. Our competitors also may obtain FDA or other regulatory approval for their products sooner than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we or our collaborators are able to enter the market. The key competitive factors affecting the success of all of our product candidates, if approved, are likely to be their efficacy, safety, convenience, price, level of generic competition and availability of reimbursement from government and other third-party payors.

***If the market opportunities for our programs and product candidates are smaller than we estimate or if any regulatory approval that we obtain is based on a narrower definition of the patient population, our revenue and ability to achieve profitability will be adversely affected, possibly materially.***

The incidence and prevalence for target patient populations of our programs and product candidates have not been established with precision. Our lead targeted oncology product candidate, IK-930, is an oral small molecule inhibitor of the transcriptional enhanced associate domain, or TEAD, transcription factor in the Hippo signaling pathway. The Hippo pathway is genetically altered in approximately 10% of all cancers and these genetic alterations are generally associated with poor clinical outcomes. We are developing a small molecule inhibitor program against ERK5 in the RAS signaling pathway. KRAS mutations in the RAS signaling pathway occur in approximately 26% of all cancers. Additionally, we are currently evaluating the safety and tolerability of IK-175 in a Phase 1 dose expansion clinical trial in patients with solid tumors and intend to pursue development in patients with bladder cancer with activated AHR. AHR amplifications have been described in approximately 5% to 22% of bladder cancer patients. We are also developing IK-007 in a Phase 1b clinical trial in patients with MSS CRC. Patients with MSS CRC represent approximately 80% of all colorectal cancer patients, and these patients generally do not respond to approved checkpoint inhibitors. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our programs and product candidates, are based on our estimates.

The total addressable market opportunity will ultimately depend upon, among other things, the diagnosis criteria included in the final label, the indications for which our product candidates are approved for sale, acceptance by the medical community and patient access, product pricing and reimbursement. The number of patients with the cancers and solid tumors for which our product candidates may be approved as treatment may turn out to be lower than expected, patients may not be otherwise amenable to treatment with our products, or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business. We may not be successful in our efforts to identify additional product candidates. Due to our limited resources and access to capital, we must prioritize development of certain product candidates, which may prove to be the wrong choice and may adversely affect our business.

***If our current product candidates or any future product candidates do not achieve broad market acceptance, the revenue that we generate from their sales may be limited, and we may never become profitable.***

We have never commercialized a product candidate for any indication. Even if our current product candidates and any future product candidates are approved by the appropriate regulatory authorities for marketing and sale, they may not gain acceptance among physicians, patients, third-party payors, and others in the medical community. If any product candidates for which we obtain regulatory approval do not gain an adequate level of market acceptance, we may not generate significant revenue and may not become profitable or may be significantly delayed in achieving profitability. Market acceptance of our current product candidates and any future product candidates by the medical community, patients and third-party payors will depend on a number of factors, some of which are beyond our control. For example, physicians are often reluctant to switch their patients, and patients may be reluctant to switch, from existing therapies even when new and potentially more effective or safer treatments enter the market. If public perception is influenced by claims that the use of cancer immunotherapies is unsafe, whether related to our or our competitors' products, our products may not be

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accepted by the general public or the medical community. Future adverse events in targeted oncology, immuno-oncology or the biopharmaceutical industry could also result in greater governmental regulation, stricter labeling requirements and potential regulatory delays in the testing or approvals of our product candidates.

Efforts to educate the medical community and third-party payors on the benefits of our current product candidates and any future product candidates may require significant resources and may not be successful. If our current product candidates or any future product candidates are approved but do not achieve an adequate level of market acceptance, we could be prevented from or significantly delayed in achieving profitability. The degree of market acceptance of any of our current product candidates and any future product candidates will depend on a number of factors, including:

- the efficacy of our current product candidates and any future product candidates as single agents and in combination with marketed checkpoint inhibitor immunotherapies;
- the commercial success of the checkpoint blockade drugs with which our products may be co-administered;
- the prevalence and severity of adverse events associated with our current product candidates and any future product candidates or those products with which they may be co-administered;
- the clinical indications for which our product candidates are approved and the approved claims that we may make for the products;
- limitations or warnings contained in the product's FDA-approved labeling or those of comparable foreign regulatory authorities, including potential limitations or warnings for our current product candidates and any future product candidates that may be more restrictive than other competitive products;
- changes in the standard of care for the targeted indications for our current product candidates and any future product candidates, which could reduce the marketing impact of any claims that we could make following FDA approval or approval by comparable foreign regulatory authorities, if obtained;
- the relative convenience and ease of administration of our current product candidates and any future product candidates and any products with which they are co-administered;
- the cost of treatment compared with the economic and clinical benefit of alternative treatments or therapies;
- the availability of adequate coverage or reimbursement by third party payors, including government healthcare programs such as Medicare and Medicaid and other healthcare payors;
- the price concessions required by third-party payors to obtain coverage;
- the willingness of patients to pay out-of-pocket in the absence of adequate coverage and reimbursement;
- the extent and strength of our marketing and distribution of our current product candidates and any future product candidates;
- the safety, efficacy, and other potential advantages over, and availability of, alternative treatments already used or that may later be approved;
- distribution and use restrictions imposed by the FDA or comparable foreign regulatory authorities with respect to our current product candidates and any future product candidates or to which we agree as part of a risk evaluation and mitigation strategy, or REMS, or voluntary risk management plan;
- the timing of market introduction of our current product candidates and any future product candidates, as well as competitive products;
- our ability to offer our current product candidates and any future product candidates for sale at competitive prices;

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- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the extent and strength of our third-party manufacturer and supplier support;
- the actions of companies that market any products with which our current product candidates and any future product candidates may be co-administered;
- the approval of other new products;
- adverse publicity about our current product candidates and any future product candidates or any products with which they are co-administered, or favorable publicity about competitive products; and
- potential product liability claims.

### **Risks Related to Our Reliance on Third Parties**

***We rely on third parties to conduct our Phase 1 clinical trial of IK-175 and Phase 1b clinical trial of IK-007 and expect to rely on third parties to conduct clinical trials for our targeted oncology and other tumor microenvironment programs, as well as investigator-sponsored clinical trials of our product candidates. If these third parties do not successfully carry out their contractual duties, comply with regulatory requirements or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.***

We do not have the ability to independently conduct clinical trials. We rely and expect to continue to rely on medical institutions, clinical investigators, contract laboratories and other third parties, such as CROs, to conduct or otherwise support clinical trials for our product candidates, including our Phase 1 clinical trial of IK-175 and Phase 1b clinical trial of IK-007, as well as IK-930 and any other product candidates that emerge from our targeted oncology and tumor microenvironment programs. We may also rely on academic and private non-academic institutions to conduct and sponsor clinical trials relating to our product candidates. We will not control the design or conduct of the investigator-sponsored trials, and it is possible that the FDA or non-U.S. regulatory authorities will not view these investigator-sponsored trials as providing adequate support for future clinical trials, whether controlled by us or third parties, for any one or more reasons, including elements of the design or execution of the trials or safety concerns or other trial results.

Such arrangements will likely provide us certain information rights with respect to the investigator-sponsored trials, including access to and the ability to use and reference the data, including for our own regulatory filings, resulting from the investigator-sponsored trials. However, we would not have control over the timing and reporting of the data from investigator-sponsored trials, nor would we own the data from the investigator-sponsored trials. If we are unable to confirm or replicate the results from the investigator-sponsored trials or if negative results are obtained, we would likely be further delayed or prevented from advancing further clinical development of our product candidates. Further, if investigators or institutions breach their obligations with respect to the clinical development of our product candidates, or if the data proves to be inadequate compared to the first-hand knowledge we might have gained had the investigator-sponsored trials been sponsored and conducted by us, then our ability to design and conduct any future clinical trials ourselves may be adversely affected.

We rely and expect to continue to rely heavily on these parties for execution of clinical trials for our product candidates and control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the applicable protocol, legal and regulatory requirements and scientific standards, and our reliance on CROs will not relieve us of our regulatory responsibilities. For any violations of laws and regulations during the conduct of our clinical trials, we could be subject to warning letters or enforcement action that may include civil penalties up to and including criminal prosecution.

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We, our principal investigators and our CROs are required to comply with regulations, including Good Clinical Practices, or GCPs, for conducting, monitoring, recording and reporting the results of clinical trials to ensure that the data and results are scientifically credible and accurate, and that the trial patients are adequately informed of the potential risks of participating in clinical trials and their rights are protected. These regulations are enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area and comparable foreign regulatory authorities for any products in clinical development. The FDA enforces GCP regulations through periodic inspections of clinical trial sponsors, principal investigators and trial sites. If we, our principal investigators or our CROs fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, the FDA will determine that any of our future clinical trials will comply with GCPs. In addition, our clinical trials must be conducted with product candidates produced under current Good Manufacturing Practice, or cGMP, regulations. Our failure or the failure of our principal investigators or CROs to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process, significantly increase our expenditures and could also subject us to enforcement action. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

Although we designed our Phase 1 clinical trial of IK-175 and Phase 1b clinical trial of IK-007 and intend to design the future clinical trials for our product candidates, these trials are conducted by CROs and we expect CROs will conduct all of our future clinical trials. As a result, many important aspects of our development programs, including their conduct and timing, are outside of our direct control. Our reliance on third parties to conduct future clinical trials also results in less direct control over the management of data developed through clinical trials than would be the case if we were relying entirely upon our own staff. Communicating with outside parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. Outside parties may:

- have staffing difficulties;
- fail to comply with contractual obligations;
- experience regulatory compliance issues;
- undergo changes in priorities or become financially distressed; or
- form relationships with other entities, some of which may be our competitors.

These factors may materially adversely affect the willingness or ability of third parties to conduct our clinical trials and may subject us to unexpected cost increases that are beyond our control. If the principal investigators or CROs do not perform clinical trials in a satisfactory manner, breach their obligations to us or fail to comply with regulatory requirements, the development, regulatory approval and commercialization of our product candidates may be delayed, we may not be able to obtain regulatory approval and commercialize our product candidates or our development program may be materially and irreversibly harmed. If we are unable to rely on clinical data collected by our principal investigators or CROs, we could be required to repeat, extend the duration of, or increase the size of any clinical trials we conduct and this could significantly delay commercialization and require significantly greater expenditures.

If any of our relationships with these third-party principal investigators or CROs terminate, we may not be able to enter into arrangements with alternative CROs. If principal investigators or CROs do not successfully carry out their contractual obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, any clinical trials such principal investigators or CROs are associated with may be extended, delayed or terminated, and we may not be able to obtain regulatory approval

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for, or successfully commercialize, our product candidates. As a result, we believe that our financial results and the commercial prospects for our product candidates in the subject indication would be harmed, our costs could increase and our ability to generate revenue could be delayed.

***We have entered into collaborations and may enter into additional collaborations in the future, and we might not realize the anticipated benefits of such collaborations.***

Research, development, commercialization and/or strategic collaborations, including the existing collaboration that we have with Celgene Corporation (now part of BMS), are subject to numerous risks, which include the following:

- collaborators may have significant control or discretion in determining the efforts and resources that they will apply to a collaboration, and might not commit sufficient efforts and resources or might misapply those efforts and resources;
- we may have limited influence or control over the approaches to research, development and/or commercialization of product candidates in the territories in which our collaboration partners lead research, development and/or commercialization;
- collaborators might not pursue research, development and/or commercialization of collaboration product candidates or might elect not to continue or renew research, development and/or commercialization programs based on nonclinical and/or clinical trial results, changes in their strategic focus, availability of funding or other factors, such as a business combination that diverts resources or creates competing priorities;
- collaborators might delay, provide insufficient resources to, or modify or stop research or clinical development for collaboration product candidates or require a new formulation of a product candidate for clinical testing;
- collaborators with sales, marketing and distribution rights to one or more product candidates might not commit sufficient resources to sales, marketing and distribution or might otherwise fail to successfully commercialize those product candidates;
- collaborators might not properly maintain or defend our intellectual property rights or might use our intellectual property improperly or in a way that jeopardizes our intellectual property or exposes us to potential liability;
- collaboration activities might result in the collaborator having intellectual property covering our activities or product candidates, which could limit our rights or ability to research, develop and/or commercialize our product candidates;
- collaborators might not be in compliance with laws applicable to their activities under the collaboration, which could impact the collaboration and us;
- disputes might arise between a collaborator and us that could cause a delay or termination of the collaboration or result in costly litigation that diverts management attention and resources; and
- collaborations might be terminated, which could result in a need for additional capital to pursue further research, development and/or commercialization of our product candidates.

In addition, funding provided by a collaborator might not be sufficient to advance product candidates under the collaboration. For example, although BMS provided us with an \$80.5 million upfront payment and a \$14.5 million equity investment upon entering into that certain master collaboration agreement with Celgene Corporation (now BMS), we might need additional funding to advance product candidates prior to the completion of a Phase 1b clinical trial for each of IK-175 and IK-412, which are the clinical milestones when BMS must decide whether to exercise its exclusive license rights to those product candidates. On November 20, 2019, BMS acquired Celgene Corporation and BMS may take a different approach to our collaboration or determine not to continue the collaboration.



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If a collaborator terminates a collaboration or a program under a collaboration, including by failing to exercise a license or other option under the collaboration, whether because we fail to meet a milestone or otherwise, any potential revenue from the collaboration would be significantly reduced or eliminated. In addition, we will likely need to either secure other funding to advance research, development and/or commercialization of the relevant product candidate or abandon that program, the development of the relevant product candidate could be significantly delayed, and our cash expenditures could increase significantly if we are to continue research, development and/or commercialization of the relevant product candidates.

Any one or more of these risks, if realized, could reduce or eliminate future revenue from product candidates under our collaborations, and could have a material adverse effect on our business, financial condition, results of operations and/or growth prospects.

***We contract with third parties for the manufacture of our product candidates for preclinical development and clinical testing, and expect to continue to do so for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.***

We do not currently own or operate, nor do we have any plans to establish in the future, any manufacturing facilities. We rely, and expect to continue to rely, on third parties for the manufacture of our product candidates for preclinical development and clinical testing, as well as for the commercial manufacture of our products if any of our product candidates receive regulatory approval. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost or quality, which could delay, prevent or impair our development or commercialization efforts.

The facilities used by our contract manufacturers to manufacture our product candidates must be inspected by the FDA pursuant to pre-approval inspections that will be conducted after we submit our marketing applications to the FDA. We do not control the manufacturing process of, and will be completely dependent on, our contract manufacturers for compliance with cGMPs in connection with the manufacture of our product candidates. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to pass regulatory inspections and/or maintain regulatory compliance for their manufacturing facilities. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority finds deficiencies with or does not approve these facilities for the manufacture of our product candidates or if it finds deficiencies or withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved.

If any contract manufacturing organization, or CMO, with whom we contract fails to perform its obligations, we may be forced to enter into an agreement with a different CMO, which we may not be able to do on reasonable terms, if at all. In such scenario, our clinical trials supply could be delayed significantly as we establish alternative supply sources. In some cases, the technical skills required to manufacture our products or product candidates may be unique or proprietary to the original CMO and we may have difficulty, or there may be contractual restrictions prohibiting us from, transferring such skills to a back-up or alternate supplier, or we may be unable to transfer such skills at all. In addition, if we are required to change CMOs for any reason, we will be required to verify that the new CMO maintains facilities and procedures that comply with quality standards and with all applicable regulations. We will also need to verify, such as through a manufacturing comparability study, that any new manufacturing process will produce our product candidate according to the specifications previously submitted to the FDA or another regulatory authority. The delays associated with the verification of a new CMO could negatively affect our ability to develop product candidates or commercialize our products in a timely manner or within budget. Furthermore, a CMO may possess technology related to the manufacture of our product candidate that such CMO owns independently. This would increase our reliance on such CMO or require us to obtain a license from such CMO in order to have another CMO manufacture our product candidates. In

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addition, changes in manufacturers often involve changes in manufacturing procedures and processes, which could require that we conduct bridging studies between our prior clinical supply used in our clinical trials and that of any new manufacturer. We may be unsuccessful in demonstrating the comparability of clinical supplies which could require the conduct of additional clinical trials.

Further, our failure, or the failure of our third party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, if approved, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect our business and supplies of our product candidates.

We may be unable to establish any additional agreements with third-party manufacturers or do so on acceptable terms. Reliance on third-party manufacturers entails additional risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Our product candidates and any products that we may develop may compete with other product candidates and approved products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us.

Any performance failure on the part of our existing or future manufacturers could delay clinical development or regulatory approval. If our current contract manufacturers cannot perform as agreed, we may be required to replace such manufacturers. We may incur added costs and delays in identifying and qualifying any such replacement.

Our current and anticipated future dependence upon others for the manufacture of our product candidates or products may adversely affect our future profit margins and our ability to commercialize any products that receive regulatory approval on a timely and competitive basis.

***The third parties upon whom we rely for the supply of the active pharmaceutical ingredients used in our product candidates are our sole source of supply, and the loss of any of these suppliers could significantly harm our business.***

The active pharmaceutical ingredients, or API, used in all of our product candidates are supplied to us from single-source suppliers. Our ability to successfully develop our product candidates, and to ultimately supply our commercial products in quantities sufficient to meet the market demand, depends in part on our ability to obtain the API for these products in accordance with regulatory requirements and in sufficient quantities for clinical testing and commercialization. Moreover, for IK-412, we depend on a single-source supplier of high grade polyethylene glycol, or PEG, a key component that is added to the API and contributes to the properties of IK-412. We do not currently have arrangements in place for a redundant or second-source supply of any such API in the event any of our current suppliers of such API cease their operations for any reason. We are also unable to predict how changing global economic conditions or potential global health concerns such as the COVID-19 pandemic will affect our third-party suppliers and manufacturers. Any negative impact of such matters on our third-party suppliers and manufacturers may also have an adverse impact on our results of operations or financial condition.

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For all of our product candidates, we intend to identify and qualify additional manufacturers to provide such API prior to submission of an NDA to the FDA and/or an MAA to the EMA. We are not certain, however, that our single-source suppliers will be able to meet our demand for their products, either because of the nature of our agreements with those suppliers, our limited experience with those suppliers or our relative importance as a customer to those suppliers. It may be difficult for us to assess their ability to timely meet our demand in the future based on past performance. While our suppliers have generally met our demand for their products on a timely basis in the past, they may subordinate our needs in the future to their other customers.

Establishing additional or replacement suppliers for the API used in our product candidates, if required, may not be accomplished quickly. If we are able to find a replacement supplier, such replacement supplier would need to be qualified and may require additional regulatory inspection or approval, which could result in further delay. While we seek to maintain adequate inventory of the API used in our product candidates, any interruption or delay in the supply of components or materials, or our inability to obtain such API from alternate sources at acceptable prices in a timely manner could impede, delay, limit or prevent our development efforts, which could harm our business, results of operations, financial condition and prospects.

***The manufacture of biologics is complex and our third-party manufacturers may encounter difficulties in production. If any of our third-party manufacturers encounter such difficulties, our ability to provide supply of product candidates for clinical trials or products for patients, if approved, could be delayed or prevented.***

Manufacturing biologics, especially in large quantities, is often complex and may require the use of innovative technologies to handle living cells. Each lot of an approved biologic must undergo thorough testing for identity, strength, quality, purity and potency. Manufacturing biologics requires facilities specifically designed for and validated for this purpose, and sophisticated quality assurance and quality control procedures are necessary. Slight deviations anywhere in the manufacturing process, including filling, labeling, packaging, storage and shipping and quality control and testing, may result in lot failures, product recalls or spoilage. When changes are made to the manufacturing process, we may be required to provide preclinical and clinical data showing the comparable identity, strength, quality, purity or potency of the products before and after such changes. If microbial, viral or other contaminations are discovered at the facilities of our manufacturers, such facilities may need to be closed for an extended period of time to investigate and remedy the contamination, which could delay clinical trials and adversely harm our business.

In addition, there are risks associated with large scale manufacturing for clinical trials or commercial scale including, among others, cost overruns, potential problems with process scale-up, process reproducibility, stability issues, compliance with good manufacturing practices, lot consistency and timely availability of raw materials. Even if we obtain regulatory approval for any of our current product candidates or any future product candidates, there is no assurance that our manufacturers will be able to manufacture the approved product to specifications acceptable to the FDA or other comparable foreign regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential commercial launch of the product or to meet potential future demand. If our manufacturers are unable to produce sufficient quantities for clinical trials or for commercialization, our development and commercialization efforts would be impaired, which would have an adverse effect on our business, financial condition, results of operations and growth prospects.

***We may seek to establish additional collaborations, and, if we are not able to establish them on commercially reasonable terms, or at all, we may have to alter our development and commercialization plans.***

Our product development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. For some of our product candidates, we may decide to collaborate with additional pharmaceutical and biotechnology companies for the development and potential commercialization of those product candidates.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and

expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's own evaluation of a potential collaboration. Such factors a potential collaborator will use to evaluate a collaboration may include the design or results of clinical trials, the likelihood of approval by the FDA or comparable foreign regulatory authorities, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. The terms of any additional collaborations or other arrangements that we may establish may not be favorable to us.

We may also be restricted under collaboration agreements from entering into future agreements on certain terms with potential collaborators. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate additional collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue.

In addition, any future collaborations that we enter into may not be successful. The success of our collaboration arrangements will depend heavily on the efforts and activities of our collaborators. Collaborators generally have significant discretion in determining the efforts and resources that they will apply to these collaborations. Disagreements between parties to a collaboration arrangement regarding clinical development and commercialization matters can lead to delays in the development process or commercializing the applicable product candidate and, in some cases, termination of the collaboration arrangement. These disagreements can be difficult to resolve if neither of the parties has final decision-making authority. Collaborations with pharmaceutical or biotechnology companies and other third parties often are terminated or allowed to expire by the other party. Any such termination or expiration would adversely affect us financially and could harm our business reputation.

#### **Risks Related to Our Intellectual Property**

***If we are unable to obtain and maintain patent and other intellectual property protection for our technology and product candidates or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and drugs similar or identical to ours, and our ability to successfully commercialize our technology and drugs may be impaired.***

Our commercial success depends in part on our ability to obtain and maintain proprietary or intellectual property protection in the U.S. and other countries for our current or future product candidates, including our current lead product candidates, IK-930, IK-175, IK-412, IK-007, and our other future product candidates, such as against our Ras signaling target, ERK5, as well as for their respective compositions, formulations, methods used to manufacture them, and methods of treatment, in addition to successfully defending these patents against third-party challenges. We seek to protect our proprietary and intellectual property position by, among other methods, filing patent applications in the U.S. and abroad related to our proprietary technology, inventions, and

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improvements that are important to the development and implementation of our business. Our ability to stop unauthorized third parties from making, using, selling, offering to sell, or importing our product candidates is dependent upon the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities. We also rely on trade secrets, know-how and continuing technological innovation to develop and maintain our proprietary and intellectual property position.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. The degree of patent protection we require to successfully commercialize our current or future product candidates may be unavailable or severely limited in some cases and may not adequately protect our rights or permit us to gain or keep any competitive advantage. We cannot provide any assurances that any of our patents have, or that any of our pending patent applications that mature into issued patents will include, claims with a scope sufficient to protect IK-930, IK-175, IK-412, IK-007 or our other current or future product candidates, including against our Ras signaling pathway, target ERK5. In addition, if the breadth or strength of protection provided by our patent applications or any patents we may own or in-license is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the U.S. For example, in jurisdictions outside the U.S., a license may not be enforceable unless all the owners of the intellectual property agree or consent to the license. Accordingly, any actual or purported co-owner of our patent rights could seek monetary or equitable relief requiring us to pay it compensation for, or refrain from, exploiting these patents due to such co-ownership. Furthermore, patents have a limited lifespan. In the U.S., and most other jurisdictions in which we have undertaken patent filings, the natural expiration of a patent is generally twenty years after it is filed, assuming all maintenance fees are paid. Various extensions may be available, on a jurisdiction-by-jurisdiction basis; however, the life of a patent, and thus the protection it affords, is limited. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, patents we may own or in-license may not provide us with adequate and continuing patent protection sufficient to exclude others from commercializing drugs similar or identical to our current or future product candidates, including generic versions of such drugs.

Other parties have developed technologies that may be related or competitive to our own, and such parties may have filed or may file patent applications, or may have received or may receive patents, claiming inventions that may overlap or conflict with those claimed in our own patent applications or issued patents, with respect to either the same compounds, methods, formulations or other subject matter, in either case that we may rely upon to dominate our patent position in the market. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the U.S. and other jurisdictions are typically not published until at least 18 months after the earliest priority date of patent filing, or, in some cases, not at all. Therefore, we cannot know with certainty whether we were the first to make the inventions claimed in patents we may own or in-license patents or pending patent applications, or that we were the first to file for patent protection of such inventions. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights cannot be predicted with any certainty.

In addition, the patent prosecution process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. Further, with respect to certain pending patent applications covering our current or future product candidates, prosecution has yet to commence. Patent prosecution is a lengthy process, during which the scope of the claims initially submitted for examination by the relevant patent office(s) may be significantly narrowed by the time they issue, if they ever do. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we license from or to third parties. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

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Even if we acquire patent protection that we expect should enable us to establish and/or maintain a competitive advantage, third parties may challenge the validity, enforceability or scope thereof, which may result in such patents being narrowed, invalidated or held unenforceable. The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our patents may be challenged in the courts or patent offices in the U.S. and abroad. We may become involved in post-grant proceedings such as opposition, derivation, reexamination, *inter partes* review, post-grant review, or interference proceedings challenging our patent rights or the patent rights of others from whom we may in the future obtain licenses to such rights, in the U.S. Patent and Trademark Office (USPTO), the European Patent Office (EPO), or in other countries. In addition, we may be subject to a third-party submission to the USPTO, the EPO, or elsewhere, that may reduce the scope or preclude the granting of claims from our pending patent applications. Competitors may allege that they invented the inventions claimed in our issued patents or patent applications prior to us, or may file patent applications before we do. Competitors may also claim that we are infringing their patents and that we therefore cannot practice our technology as claimed under our patents or patent applications. Competitors may also contest our patents by claiming to an administrative patent authority or judge that the invention was not patent-eligible, was not original, was not novel, was obvious, and/or lacked inventive step, and/or that the patent application filing failed to meet relevant requirements relating to description, basis, enablement, and/or support; in litigation, a competitor could claim that our patents, if issued, are not valid or are unenforceable for a number of reasons. If a court or administrative patent authority agrees, we would lose our protection of those challenged patents.

In addition, we may in the future be subject to claims by our former employees or consultants asserting an ownership right in our patents or patent applications, as a result of the work they performed on our behalf. Although we generally require all of our employees, consultants and advisors and any other third parties who have access to our proprietary know-how, information or technology to assign or grant similar rights to their inventions to us, we cannot be certain that we have executed such agreements with all parties who may have contributed to our intellectual property, nor can we be certain that our agreements with such parties will be upheld in the face of a potential challenge, or that they will not be breached, for which we may not have an adequate remedy.

An adverse determination in any such submission or proceeding may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and drugs, without payment to us, or could limit the duration of the patent protection covering our technology and current or future product candidates. Such challenges may also result in our inability to manufacture or commercialize our current or future product candidates without infringing third-party patent rights. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

Even if they are unchallenged, our issued patents and our pending patent applications, if issued, may not provide us with any meaningful protection or prevent competitors from designing around our patent claims to circumvent patents we may own or in-license by developing similar or alternative technologies or drugs in a non-infringing manner. For example, a third-party may develop a competitive drug that provides benefits similar to one or more of our current or future product candidates but that has a different composition that falls outside the scope of our patent protection. If the patent protection provided by the patents and patent applications we hold or pursue with respect to our current or future product candidates is not sufficiently broad to impede such competition, our ability to successfully commercialize our current or future product candidates could be negatively affected, which would harm our business.

Furthermore, even if we are able to issue patents with claims of valuable scope in one or more jurisdictions, we may not be able to secure such claims in all relevant jurisdictions, or in a sufficient number to meaningfully reduce competition. Our competitors may be able to develop and commercialize their products, including products identical to ours, in any jurisdiction in which we are unable to obtain, maintain, or enforce such patent claims.

***Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, deadlines, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated if we fail to comply with these requirements. We may miss a filing deadline for patent protection on these inventions.***

The USPTO and foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process and after issuance of any patent. In addition, periodic maintenance fees, renewal fees, annuity fees and/or various other government fees are required to be paid periodically. While an inadvertent lapse can, in some cases, be cured by payment of a late fee, or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In such an event, our competitors might be able to enter the market with similar or identical products or platforms, which could have a material adverse effect on our business prospects and financial condition.

***If our trademarks and trade names for our products or company name are not adequately protected in one or more countries where we intend to market our products, we may delay the launch of product brand names, use different trademarks or tradenames in different countries, or face other potentially adverse consequences to building our product brand recognition.***

Our trademarks or trade names may be challenged, infringed, diluted, circumvented or declared generic or determined to be infringing on other marks. We intend to rely on both registration and common law protection for our trademarks. We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. During the trademark registration process, we may receive Office Actions from the USPTO or from comparable agencies in foreign jurisdictions objecting to the registration of our trademark. Although we would be given an opportunity to respond to those objections, we may be unable to overcome such rejections. In addition, in the USPTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and/or to seek the cancellation of registered trademarks. Opposition or cancellation proceedings may be filed against our trademark applications or registrations, and our trademark applications or registrations may not survive such proceedings. If we are unable to obtain a registered trademark or establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be adversely affected.

***If we are unable to adequately protect and enforce our trade secrets, our business and competitive position would be harmed.***

In addition to the protection afforded by patents we may own or in-license, we seek to rely on trade secret protection, confidentiality agreements, and license agreements to protect proprietary know-how that may not be patentable, processes for which patents are difficult to enforce and any other elements of our product discovery and development processes that involve proprietary know-how, information, or technology that may not be covered by patents. Although we require all of our employees, consultants, advisors, and any third parties who have access to our proprietary know-how, information, or technology to enter into confidentiality agreements, trade secrets can be difficult to protect and we have limited control over the protection of trade secrets used by our collaborators and suppliers. We cannot be certain that we have or will obtain these agreements in all circumstances and we cannot guarantee that we have entered into such agreements with each party that may have or have had access to our trade secrets or proprietary information.

Moreover, any of these parties might breach the agreements and intentionally or inadvertently disclose our trade secret information and we may not be able to obtain adequate remedies for such breaches. In addition, competitors may otherwise gain access to our trade secrets or independently develop substantially equivalent

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information and techniques. Furthermore, the laws of some foreign countries do not protect proprietary rights and trade secrets to the same extent or in the same manner as the laws of the U.S. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the U.S. and abroad. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, we will not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, financial condition, results of operations and future prospects.

Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. If we choose to go to court to stop a third-party from using any of our trade secrets, we may incur substantial costs. These lawsuits may consume our time and other resources even if we are successful. Although we take steps to protect our proprietary information and trade secrets, including through contractual means with our employees and consultants, third parties may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or disclose our technology. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third-party, we would have no right to prevent them from using that technology or information to compete with us.

Thus, we may not be able to meaningfully protect our trade secrets. It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed or made known to the individual or entity during the course of the party's relationship with us is to be kept confidential and not disclosed to third parties except in specific circumstances. In addition, we take other appropriate precautions, such as physical and technological security measures, to guard against misappropriation of our proprietary technology by third parties. In the case of employees, the agreements provide that all inventions conceived by the individual, and which are related to our current or planned business or research and development or made during normal working hours, on our premises or using our equipment or proprietary information, are our exclusive property. Although we require all of our employees to assign their inventions to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Such claims could have a material adverse effect on our business, financial condition, results of operations, and prospects.

***We may initiate, become a defendant in, or otherwise become party to lawsuits to protect or enforce our intellectual property rights, which could be expensive, time-consuming, and unsuccessful.***

Competitors may infringe any patents we may own or in-license. In addition, any patents we may own or in-license also may become involved in inventorship, priority, validity or unenforceability disputes. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. In addition, in an infringement proceeding, a court may decide that one or more of any patents we may own or in-license is not valid or is unenforceable or that the other party's use of our technology that may be patented falls under the safe harbor to patent infringement under 35 U.S.C. § 271(e)(1). There is also the risk that, even if the validity of these patents is upheld, the court may refuse to stop the other party from using the technology at issue on the grounds that any patents we may own or in-license do not cover the technology in question or that such third-party's activities do not infringe our patent applications or any patents we may own or in-license. An adverse result in any litigation or defense proceedings could put one or more of any patents we may own or in-license at risk of being invalidated, held unenforceable, or interpreted narrowly and could put our patent applications at risk of not issuing. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or



any future sales, marketing, patient support or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

Post-grant proceedings provoked by third-parties or brought by the USPTO may be necessary to determine the validity or priority of inventions with respect to our patent applications or any patents we may own or in-license. These proceedings are expensive and an unfavorable outcome could result in a loss of our current patent rights and could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. In addition to potential USPTO post-grant proceedings, we may become a party to patent opposition proceedings in the EPO, or similar proceedings in other foreign patent offices or courts where our patents may be challenged. The costs of these proceedings could be substantial, and may result in a loss of scope of some claims or a loss of the entire patent. An unfavorable result in a post-grant challenge proceeding may result in the loss of our right to exclude others from practicing one or more of our inventions in the relevant country or jurisdiction, which could have a material adverse effect on our business. Litigation or post-grant proceedings within patent offices may result in a decision adverse to our interests and, even if we are successful, may result in substantial costs and distract our management and other employees. We may not be able to prevent, misappropriation of our trade secrets or confidential information, particularly in countries where the laws may not protect those rights as fully as in the U.S.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

We may not be able to detect infringement against any patents we may own or in-license. Even if we detect infringement by a third-party of any patents we may own or in-license, we may choose not to pursue litigation against or settlement with the third-party. If we later sue such third-party for patent infringement, the third-party may have certain legal defenses available to it, which otherwise would not be available except for the delay between when the infringement was first detected and when the suit was brought. Such legal defenses may make it impossible for us to enforce any patents we may own or in-license against such third-party.

***Intellectual property litigation and administrative patent office patent validity challenges in one or more countries could cause us to spend substantial resources and distract our personnel from their normal responsibilities.***

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing, patient support or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. As noted above, some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace, including compromising our ability to raise the funds necessary to continue our clinical trials, continue our research

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programs, license necessary technology from third parties, or enter into development collaborations that would help us commercialize our current or future product candidates, if approved. Any of the foregoing events would harm our business, financial condition, results of operations and prospects.

***We may be subject to damages or settlement costs resulting from claims that we or our employees have violated the intellectual property rights of third parties, or are in breach of our agreements. We may be accused of, allege or otherwise become party to lawsuits or disputes alleging wrongful disclosure of third-party confidential information by us or by another party, including current or former employees, contractors or consultants. In addition to diverting attention and resources to such disputes, such disputes could adversely impact our business reputation and/or protection of our proprietary technology.***

The intellectual property landscape relevant to our product candidates and programs is crowded, and third parties may initiate legal proceedings alleging that we are infringing, misappropriating or otherwise violating their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business. Our commercial success depends upon our ability to develop, manufacture, market and sell our current and future product candidates and use our proprietary technologies without infringing, misappropriating or otherwise violating the intellectual property rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries, as well as administrative proceedings for challenging patents, including derivation, interference, reexamination, *inter partes* review and post grant review proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. We or any of our current or future licensors or strategic partners may be party to, exposed to, or threatened with, future adversarial proceedings or litigation by third parties having patent or other intellectual property rights alleging that our current or future product candidates and/or proprietary technologies infringe, misappropriate or otherwise violate their intellectual property rights. We cannot assure you that our current or future product candidates and other technologies that we have developed, are developing or may develop in the future do not or will not infringe, misappropriate or otherwise violate existing or future patents or other intellectual property rights owned by third parties. For example, many of our employees were previously employed at other biotechnology or pharmaceutical companies. Although we try to ensure that our employees, consultants and advisors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these individuals have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's former employer. We may also be subject to claims that patents and applications we have filed to protect inventions of our employees, consultants and advisors, even those related to one or more of our current or future product candidates, are rightfully owned by their former or concurrent employer. Litigation may be necessary to defend against these claims.

While certain activities related to development and clinical testing of our current or future product candidates may be subject to safe harbor of patent infringement under 35 U.S.C. §271(e)(1), upon receiving FDA approval for such candidates we or any of our future licensors or strategic partners may immediately become party to, exposed to, or threatened with, future adversarial proceedings or litigation by third parties having patent or other intellectual property rights alleging that such product candidates infringe, misappropriate or otherwise violate their intellectual property rights. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing our current or future product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our current or future product candidates may give rise to claims of infringement of the patent rights of others. Moreover, it is not always clear to industry participants, including us, which patents cover various types of drugs, products or their methods of use or manufacture. Thus, because of the large number of patents issued and patent applications filed in our fields, there may be a risk that third parties may allege they have patent rights encompassing our current or future product candidates, technologies or methods.

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If a third party claims that we infringe, misappropriate or otherwise violate its intellectual property rights, we may face a number of issues, including, but not limited to:

- infringement, misappropriation and other intellectual property claims which, regardless of merit, may be expensive and time-consuming to litigate and may divert our management's attention from our core business and may impact our reputation;
- substantial damages for infringement, misappropriation or other violations, which we may have to pay if a court decides that the product candidate or technology at issue infringes, misappropriates or violates the third party's rights, and, if the court finds that the infringement was willful, we could be ordered to pay treble damages and the patent owner's attorneys' fees;
- a court prohibiting us from developing, manufacturing, marketing or selling our current product candidates, including IK-930, IK-007, IK-175, and IK-412, or future product candidates, such as against our Ras signaling target, ERK5, or from using our proprietary technologies, unless the third-party licenses its product rights to us, which it is not required to do, on commercially reasonable terms or at all;
- if a license is available from a third party, we may have to pay substantial royalties, upfront fees and other amounts, and/or grant cross-licenses to intellectual property rights for our products, or the license to us may be non-exclusive, which would permit third parties to use the same intellectual property to compete with us;
- redesigning our current or future product candidates or processes so they do not infringe, misappropriate or violate third-party intellectual property rights, which may not be possible or may require substantial monetary expenditures and time; and
- there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and, if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, results of operations, financial condition and prospects. The occurrence of any of the foregoing could have a material adverse effect on our business, financial condition, results of operations or prospects.

We may choose to challenge the patentability of claims in a third-party's U.S. patent by requesting that the USPTO review the patent claims in an ex-parte re-exam, *inter partes* review or post-grant review proceedings. These proceedings are expensive and may consume our time or other resources. We may choose to challenge a third-party's patent in patent opposition proceedings in the EPO, or other foreign patent office. The costs of these opposition proceedings could be substantial, and may consume our time or other resources. If we fail to obtain a favorable result at the USPTO, EPO or other patent office then we may be exposed to litigation by a third-party alleging that the patent may be infringed by our current or future product candidates or proprietary technologies.

Third parties may assert that we are employing their proprietary technology without authorization. Patents issued in the U.S. by law enjoy a presumption of validity that can be rebutted in U.S. courts only with evidence that is "clear and convincing," a heightened standard of proof. There may be issued third-party patents of which we are currently unaware with claims to compositions, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our current or future product candidates. Patent applications can take many years to issue. In addition, because some patent applications in the U.S. may be maintained in secrecy until the patents are issued, patent applications in the U.S. and many foreign jurisdictions are typically not published until 18 months after their earliest priority filing date, and publications in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed patent applications covering our current or future product candidates or technology. If any such patent applications issue as patents, and if such patents have

priority over our patent applications or patents we may own or in-license, we may be required to obtain rights to such patents owned by third parties which may not be available on commercially reasonable terms or at all, or may only be available on a non-exclusive basis. There may be currently pending third-party patent applications which may later result in issued patents that our current or future product candidates may infringe. It is also possible that patents owned by third parties of which we are aware, but which we do not believe are relevant to our current or future product candidates or other technologies, could be found to be infringed by our current or future product candidates or other technologies. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. Moreover, we may fail to identify relevant patents or incorrectly conclude that a patent is invalid, not enforceable, exhausted, or not infringed by our activities. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of our current or future product candidates, molecules used in or formed during the manufacturing process, or any final product itself, the holders of any such patents may be able to block our ability to commercialize the product candidate unless we obtained a license under the applicable patents, or until such patents expire or they are finally determined to be held invalid or unenforceable. Similarly, if any third-party patent were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy or patient selection methods, the holders of any such patent may be able to block our ability to develop and commercialize the product candidate unless we obtained a license or until such patent expires or is finally determined to be held invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms or at all. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, or at all, our ability to commercialize our current or future product candidates may be impaired or delayed, which could in turn significantly harm our business. Even if we obtain a license, it may be nonexclusive, thereby giving our competitors access to the same technologies licensed to us.

Parties making claims against us may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our current or future product candidates. Defense of these claims, regardless of their merit, could involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement, misappropriation or other violation against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible or require substantial time and monetary expenditure. We cannot predict whether any such license would be available at all or whether it would be available on commercially reasonable terms. Furthermore, even in the absence of litigation, we may need or may choose to obtain licenses from third parties to advance our research or allow commercialization of our current or future product candidates. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to further develop and commercialize our current or future product candidates, which could harm our business significantly.

***We may be unable to obtain patent or other intellectual property protection for our current or future product candidates or our future products, if any, in all jurisdictions throughout the world, and we may not be able to adequately enforce our intellectual property rights even in the jurisdictions where we seek protection.***

We may not be able to pursue patent coverage of our current or future product candidates in all countries. Filing, prosecuting and defending patents on current or future product candidates in all countries throughout the world would be prohibitively expensive, and intellectual property rights in some countries outside the U.S. can be less extensive than those in the U.S. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the U.S. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the U.S., or from selling or importing products made using our inventions in and into the U.S. or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but where enforcement is not as strong as that in the U.S. These products may compete with our current or future product

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candidates and in jurisdictions where we do not have any issued patents our patent applications or other intellectual property rights may not be effective or sufficient to prevent them from competing. Much of our patent portfolio is at the very early stage. We will need to decide whether and in which jurisdictions to pursue protection for the various inventions in our portfolio prior to applicable deadlines.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to pharmaceutical products, which could make it difficult for us to stop the infringement of any patents we may own or in-license or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce any rights we may have in our patent applications or any patents we may own or in-license in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put any patents we may own or in-license at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we are forced to grant a license to third parties with respect to any patents we may own or license that are relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations, and prospects may be adversely affected.

***We may not obtain or grant licenses or sublicenses to intellectual property rights in all markets on equally or sufficiently favorable terms with third parties.***

It may be necessary for us to use the patented or proprietary technology of third parties to commercialize our products, in which case we would be required to obtain a license from these third parties. The licensing of third-party intellectual property rights is a competitive area, and more established companies may pursue strategies to license or acquire third-party intellectual property rights that we may consider attractive or necessary. More established companies may have a competitive advantage over us due to their size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. If we are unable to license such technology, or if we are forced to license such technology on unfavorable terms, our business could be materially harmed. If we are unable to obtain a necessary license, we may be unable to develop or commercialize the affected current or future product candidates, which could materially harm our business, and the third parties owning such intellectual property rights could seek either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties or other forms of compensation. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. Any of the foregoing could harm our competitive position, business, financial condition, results of operations and prospects.

***If we fail to comply with our obligations in any agreements under which we may license intellectual property rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.***

We may from time to time be party to license and collaboration agreements with third parties to advance our research or allow commercialization of current or future product candidates. Such agreements may impose

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numerous obligations, such as development, diligence, payment, commercialization, funding, milestone, royalty, sublicensing, insurance, patent prosecution, enforcement and other obligations on us and may require us to meet development timelines, or to exercise commercially reasonable efforts to develop and commercialize licensed products, in order to maintain the licenses. In spite of our best efforts, our licensors might conclude that we have materially breached our license agreements and might therefore terminate the license agreements, thereby removing or limiting our ability to develop and commercialize products and technologies covered by these license agreements.

Any termination of these licenses, or if the underlying patents fail to provide the intended exclusivity, could result in the loss of significant rights and could harm our ability to commercialize our current or future product candidates, and competitors or other third parties would have the freedom to seek regulatory approval of, and to market, products identical to ours and we may be required to cease our development and commercialization of certain of our current or future product candidates. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

Disputes may also arise between us and our licensors regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe, misappropriate or otherwise violate intellectual property rights of the licensor that is not subject to the licensing agreement;
- our right to sublicense patent and other rights to third parties under collaborative development relationships;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our current or future product candidates, and what activities satisfy those diligence obligations;
- the priority of invention of any patented technology; and
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our future licensors and us and our partners.

In addition, the agreements under which we may license intellectual property or technology from third parties are likely to be complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we may license prevent or impair our ability to maintain future licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected current or future product candidates, which could have a material adverse effect on our business, financial conditions, results of operations and prospects.

***Any granted patents we may own or in-license covering our current or future product candidates or other valuable technology could be narrowed or found invalid or unenforceable if challenged in court or before administrative bodies in the U.S. or abroad, including the USPTO and the EPO. A patent asserted in a judicial court could be found invalid or unenforceable during the enforcement proceeding. Administrative or judicial proceedings challenging the validity of our patents or individual patent claims could take months or years to resolve.***

If we or our licensors or strategic partners initiate legal proceedings against a third-party to enforce a patent covering one of our current or future product candidates, the defendant could counterclaim that the patent

covering our product candidate, as applicable, is invalid and/or unenforceable. In patent litigation in the U.S., defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and there are numerous grounds upon which a third-party can assert invalidity or unenforceability of a patent. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of patentable subject matter, lack of written description, lack of novelty, obviousness, or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, in the process of obtaining the patent during patent prosecution. Third parties may also raise similar claims before administrative bodies in the U.S. or abroad, even outside the context of litigation. Such mechanisms include re-examination, *inter partes* review, post grant review and equivalent proceedings in foreign jurisdictions (such as opposition proceedings). Such proceedings could result in revocation or amendment to our patent applications or any patents we may own or in-license in such a way that they no longer cover our current or future product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate or render unenforceable, any rights we may have from our patent applications or any patents we may own or in-license, allow third parties to commercialize our current or future product candidates or other technologies and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. Moreover, we may have to participate in interference proceedings declared by the USPTO to determine priority of invention or in post-grant challenge proceedings, such as oppositions in a foreign patent office, that challenge our or our future licensors' priority of invention or other features of patentability with respect to our patent applications and any patents we may own or in-license. Such challenges may result in loss of patent rights, loss of exclusivity, or in patent claims being narrowed, invalidated, or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our current or future product candidates and other technologies. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we or our future licensing partners and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, or if we are otherwise unable to adequately protect our rights, we would lose at least part, and perhaps all, of the patent protection on our current or future product candidates. Such a loss of patent protection could have a material adverse impact on our business and our ability to commercialize or license our technology and current or future product candidates.

Such proceedings also may result in substantial cost and require significant time from our scientists and management, even if the eventual outcome is favorable to us. If we are unsuccessful in any such proceeding or other priority or inventorship dispute, we may be required to obtain and maintain licenses from third parties, including parties involved in any such interference proceedings or other priority or inventorship disputes. Such licenses may not be available on commercially reasonable terms or at all, or may be non-exclusive. If we are unable to obtain and maintain such licenses, we may need to cease the development, manufacture, and commercialization of one or more of the current or future product candidates we may develop. The loss of exclusivity or the narrowing of our patent application claims could limit our ability to stop others from using or commercializing similar or identical technology and products. Any of the foregoing could have a material adverse effect on our business, results of operations, financial condition and prospects.

***Changes in patent law could diminish the value of patents in general, thereby impairing our ability to protect our current or future product candidates.***

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve both technological and legal complexity and is therefore costly, time consuming and inherently uncertain. Recent patent reform legislation in the U.S. and other countries, including the Leahy-Smith America Invents Act, or Leahy-Smith Act, signed into law on September 16, 2011, could increase those uncertainties and costs. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art and provide more efficient and cost-effective

avenues for competitors to challenge the validity of patents. In addition, the Leahy-Smith Act has transformed the U.S. patent system into a “first inventor to file” system. The first-inventor-to-file provisions, however, only became effective on March 16, 2013. Accordingly, it is not yet clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could make it more difficult to obtain patent protection for our inventions and increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could harm our business, results of operations and financial condition.

The U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. Additionally, there have been recent proposals for additional changes to the patent laws of the U.S. and other countries that, if adopted, could impact our ability to obtain patent protection for our proprietary technology or our ability to enforce our proprietary technology. Depending on future actions by the U.S. Congress, the U.S. courts, the USPTO and the relevant law-making bodies in other countries, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

***We may not identify relevant third-party patents or may incorrectly interpret the relevance, scope or expiration of a third-party patent, which might subject us to infringement claims or adversely affect our ability to develop and market our current or future product candidates.***

We cannot guarantee that any of our or our licensors’ patent searches or analyses, including the identification of relevant patents, the scope of patent claims or the expiration of relevant patents, are complete or thorough, nor can we be certain that we have identified each and every third-party patent and pending patent application in the U.S. and abroad that is relevant to or necessary for the commercialization of our current or future product candidates in any jurisdiction. For example, U.S. patent applications filed before November 29, 2000 and certain U.S. patent applications filed after that date that will not be filed outside the U.S. remain confidential until patents issue. As mentioned above, patent applications in the U.S. and elsewhere are published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Therefore, patent applications covering our current or future product candidates could have been filed by third parties without our knowledge. Additionally, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our current or future product candidates or the use of our current or future product candidates. The scope of a patent claim is determined by an interpretation of the law, the written disclosure in a patent and the patent’s prosecution history. Our interpretation of the relevance or the scope of a patent or a pending application may be incorrect, which may negatively impact our ability to market our current or future product candidates. We may incorrectly determine that our current or future product candidates are not covered by a third-party patent or may incorrectly predict whether a third party’s pending application will issue with claims of relevant scope. Our determination of the expiration date of any patent in the U.S. or abroad that we consider relevant may be incorrect, which may negatively impact our ability to develop and market our current or future product candidates. Our failure to identify and correctly interpret relevant patents may negatively impact our ability to develop and market our current or future product candidates.

If we fail to identify and correctly interpret relevant patents, we may be subject to infringement claims. We cannot guarantee that we will be able to successfully settle or otherwise resolve such infringement claims. If we fail in any such dispute, in addition to being forced to pay damages, which may be significant, we may be temporarily or permanently prohibited from commercializing any of our current or future product candidates that are held to be infringing. We might, if possible, also be forced to redesign current or future product candidates so that we no longer infringe the third-party intellectual property rights. Any of these events, even if we were ultimately to prevail, could require us to divert substantial financial and management resources that we would otherwise be able to devote to our business and could adversely affect our business, financial condition, results of operations and prospects.



***Intellectual property rights do not guarantee commercial success of current or future product candidates or other business activities. Numerous factors may limit any potential competitive advantage provided by our intellectual property rights.***

The degree of future protection afforded by our intellectual property rights, whether owned or in-licensed, is uncertain because intellectual property rights have limitations, and may not adequately protect our business, provide a barrier to entry against our competitors or potential competitors, or permit us to maintain our competitive advantage. Moreover, if a third-party has intellectual property rights that cover the practice of our technology, we may not be able to fully exercise or extract value from our intellectual property rights. The following examples are illustrative:

- patent applications that we own or may in-license may not lead to issued patents;
- patents, should they issue, that we may own or in-license, may not provide us with any competitive advantages, may be narrowed in scope, or may be challenged and held invalid or unenforceable;
- others may be able to develop and/or practice technology, including compounds that are similar to the chemical compositions of our current or future product candidates, that is similar to our technology or aspects of our technology but that is not covered by the claims of any patents we may own or in-license, should any patents issue;
- third parties may compete with us in jurisdictions where we do not pursue and obtain patent protection;
- we, or our future licensors or collaborators, might not have been the first to make the inventions covered by a patent application that we own or may in-license;
- we, or our future licensors or collaborators, might not have been the first to file patent applications covering a particular invention;
- others may independently develop similar or alternative technologies without infringing, misappropriating or otherwise violating our intellectual property rights;
- our competitors might conduct research and development activities in the U.S. and other countries that provide a safe harbor from patent infringement claims for certain research and development activities, as well as in countries where we do not have patent rights, and may then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not be able to obtain and/or maintain necessary licenses on reasonable terms or at all;
- third parties may assert an ownership interest in our intellectual property and, if successful, such disputes may preclude us from exercising exclusive rights, or any rights at all, over that intellectual property;
- we may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third-party may subsequently file a patent covering such trade secrets or know-how;
- we may not be able to maintain the confidentiality of our trade secrets or other proprietary information;
- we may not develop or in-license additional proprietary technologies that are patentable; and
- the patents of others may have an adverse effect on our business.

Should any of these events occur, they could significantly harm our business, financial condition, results of operations and prospects.

#### **Risks Related to Government Regulation**

***Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.***

We may also submit marketing applications in other countries. Regulatory authorities in jurisdictions outside of the United States have requirements for approval of product candidates with which we must comply prior to

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marketing in those jurisdictions. Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our products in certain countries. If we fail to comply with the regulatory requirements in international markets and/or receive applicable regulatory approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction, while a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in others. For example, even if the FDA grants regulatory approval of a product candidate, comparable regulatory authorities in foreign jurisdictions must also approve the manufacturing, marketing and promotion of the product candidate in those countries. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and greater than, those in the United States, including additional nonclinical studies or clinical trials as clinical trials conducted in one jurisdiction may not be accepted by regulatory authorities in other jurisdictions. In short, the foreign regulatory approval process involves all of the risks associated with FDA approval. In many jurisdictions outside the United States, a product candidate must be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we may intend to charge for our products will also be subject to approval.

***We may seek priority review designation for one or more of our other product candidates, but we might not receive such designation, and even if we do, such designation may not lead to a faster regulatory review or approval process.***

If the FDA determines that a product candidate offers a treatment for a serious condition and, if approved, the product would provide a significant improvement in safety or effectiveness, the FDA may designate the product candidate for priority review. A priority review designation means that the goal for the FDA to review an application is six months, rather than the standard review period of ten months. We may request priority review for our product candidates. The FDA has broad discretion with respect to whether or not to grant priority review status to a product candidate, so even if we believe a particular product candidate is eligible for such designation or status, the FDA may decide not to grant it. Moreover, a priority review designation does not necessarily result in an expedited regulatory review or approval process or necessarily confer any advantage with respect to approval compared to conventional FDA procedures. Receiving priority review from the FDA does not guarantee approval within the six-month review cycle or at all.

***We may seek orphan drug designation for certain of our product candidates, and we may be unsuccessful or may be unable to maintain the benefits associated with orphan drug designation, including the potential for market exclusivity.***

As part of our business strategy, we may seek orphan drug designation for certain of our product candidates, and we may be unsuccessful. Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a drug or biologic as an orphan drug if it is a product intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the United States, or a patient population of 200,000 or more in the United States where there is no reasonable expectation that the cost of developing the product will be recovered from sales in the United States. In the United States, orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and user-fee waivers.

Similarly, in Europe, the European Commission, upon the recommendation of the EMA's Committee for Orphan Medicinal Products, grants orphan drug designation to promote the development of drugs that are intended for the diagnosis, prevention or treatment of life-threatening or chronically debilitating conditions affecting not more than 5 in 10,000 persons in Europe and for which no satisfactory method of diagnosis, prevention, or treatment

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has been authorized (or the product would be a significant benefit to those affected). Additionally, designation is granted for drugs intended for the diagnosis, prevention, or treatment of a life-threatening, seriously debilitating or serious and chronic condition and when, without incentives, it is unlikely that sales of the drug in Europe would be sufficient to justify the necessary investment in developing the drug. In Europe, orphan drug designation entitles a party to financial incentives such as reduction of fees or fee waivers.

Generally, if a product with an orphan drug designation subsequently receives the first regulatory approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA or the EMA from approving another marketing application for the same product and indication for that time period, except in limited circumstances. The applicable period is seven years in the United States and ten years in Europe. The European exclusivity period can be reduced to six years if a product no longer meets the criteria for orphan drug designation or if the product is sufficiently profitable so that market exclusivity is no longer justified.

Even if we obtain orphan drug exclusivity for one of our product candidates, that exclusivity may not effectively protect our product candidate from competition because different products can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve the same product for the same condition if the FDA concludes that the later product is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care. In addition, a designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. Moreover, orphan drug exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the product to meet the needs of patients with the rare disease or condition or if another product with the same active moiety is determined to be safer, more effective, or represents a major contribution to patient care. Orphan drug designation neither shortens the development time or regulatory review time of a product nor gives the product any advantage in the regulatory review or approval process. While we may seek orphan drug designation for our product candidates, we may never receive such designations. Even if we do receive such designations, there is no guarantee that we will enjoy the benefits of those designations.

***A breakthrough therapy designation and fast track designation by the FDA, even if granted for any of our product candidates, may not lead to a faster development, regulatory review or approval process, and each designation does not increase the likelihood that any of our product candidates will receive regulatory approval in the United States.***

We may seek a breakthrough therapy designation for some of our product candidates. A breakthrough therapy is defined as a drug or biologic that is intended, alone or in combination with one or more other drugs or biologics, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the drug or biologic may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For product candidates that have been designated as breakthrough therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. Products designated as breakthrough therapies by the FDA may also be eligible for priority review and accelerated approval. Designation as a breakthrough therapy is within the discretion of the FDA. Accordingly, even if we believe one of our product candidates meets the criteria for designation as a breakthrough therapy, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of a breakthrough therapy designation for a product candidate may not result in a faster development process, review or approval compared to therapies considered for approval under conventional FDA procedures and does not assure ultimate approval by the FDA. In addition, even if one or more of our product candidates qualify as breakthrough therapies, the FDA may later decide that such product candidates no longer meet the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

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We may seek fast track designation for some of our product candidates. If a drug or biologic is intended for the treatment of a serious or life-threatening condition and the drug or biologic demonstrates the potential to address unmet medical needs for this condition, the sponsor may apply for fast track designation. The FDA has broad discretion whether or not to grant this designation, so even if we believe a particular product candidate is eligible for this designation, we cannot assure you that the FDA would decide to grant it. Even if we do receive fast track designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. The FDA may withdraw fast track designation if it believes that the designation is no longer supported by data from our clinical development program. Fast track designation alone does not guarantee qualification for the FDA's priority review procedures.

***Accelerated approval by the FDA, even if granted for our current or any other future product candidates, may not lead to a faster development or regulatory review or approval process and it does not increase the likelihood that our product candidates will receive regulatory approval.***

We may seek accelerated approval of our current or future product candidates using the FDA's accelerated approval pathway. A product may be eligible for accelerated approval if it treats a serious or life-threatening condition and generally provides a meaningful advantage over available therapies. In addition, it must demonstrate an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, or IMM, that is reasonably likely to predict an effect on IMM or other clinical benefit. As a condition of approval, the FDA requires that a sponsor of a drug or biologic receiving accelerated approval perform adequate and well-controlled post-marketing clinical trials. These confirmatory trials must be completed with due diligence. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product. Even if we do receive accelerated approval, we may not experience a faster development or regulatory review or approval process, and receiving accelerated approval does not provide assurance of ultimate FDA approval.

***If approved, our investigational products regulated as biologics may face competition from biosimilars approved through an abbreviated regulatory pathway.***

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively the ACA, includes a subtitle called the Biologics Price Competition and Innovation Act of 2009, or BPCIA, which created an abbreviated approval pathway for biologic products that are biosimilar to or interchangeable with an FDA-licensed reference biologic product. Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date that the reference product was first licensed by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a BLA for the competing product containing the sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity, and potency of the other company's product. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation, and meaning are subject to uncertainty.

We believe that any of our product candidates approved as a biologic product under a BLA should qualify for the 12-year period of exclusivity. However, there is a risk that this exclusivity could be shortened due to congressional action or otherwise, or that the FDA will not consider our investigational medicines to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. Other aspects of the BPCIA, some of which may impact the BPCIA exclusivity provisions, have also been the subject of recent litigation. Moreover, the extent to which a biosimilar, once licensed, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biologic products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

If competitors are able to obtain regulatory approval for biosimilars referencing our products, our products may become subject to competition from such biosimilars, with the attendant competitive pressure and consequences.

***The FDA, the EMA and other regulatory authorities may implement additional regulations or restrictions on the development and commercialization of our product candidates, and such changes can be difficult to predict.***

The FDA, the EMA and regulatory authorities in other countries have each expressed interest in further regulating biotechnology products. Agencies at both the federal and state level in the United States, as well as the U.S. Congressional committees and other governments or governing agencies, have also expressed interest in further regulating the biotechnology industry. Such action may delay or prevent commercialization of some or all of our product candidates. Adverse developments in clinical trials of products conducted by others may cause the FDA or other oversight bodies to change the requirements for approval of any of our product candidates. These regulatory review agencies and committees and the new requirements or guidelines they promulgate may lengthen the regulatory review process, require us to perform additional studies or trials, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our product candidates or lead to significant post-approval limitations or restrictions. As we advance our product candidates, we will be required to consult with these regulatory agencies and comply with applicable requirements and guidelines. If we fail to do so, we may be required to delay or discontinue development of such product candidates. These additional processes may result in a review and approval process that is longer than we otherwise would have expected. Delays as a result of an increased or lengthier regulatory approval process or further restrictions on the development of our product candidates can be costly and could negatively impact our ability to complete clinical trials and commercialize our current and future product candidates in a timely manner, if at all.

***Inadequate funding for the FDA, the SEC and other government agencies, including from government shut downs, or other disruptions to these agencies' operations, could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of our business may rely, which could negatively impact our business.***

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory and policy changes. Average review times at the agency have fluctuated in recent years as a result. Disruptions at the FDA and other agencies may also slow the time necessary for new product candidates to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. In addition, government funding of the SEC and other government agencies on which our operations may rely, including those that fund research and development activities, is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new product candidates to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years the U.S. government has shut down several times and certain regulatory agencies, such as the FDA and the SEC, have had to furlough critical FDA, SEC and other government employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Further, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

Separately, in response to the COVID-19 pandemic, on March 10, 2020, the FDA announced its intention to postpone most inspections of foreign manufacturing facilities and products while local, national and international conditions warrant. On March 18, 2020, the FDA announced its intention to temporarily postpone routine

surveillance inspections of domestic manufacturing facilities and provided guidance regarding the conduct of clinical trials which the FDA continues to update. As of June 23, 2020, the FDA noted it was continuing to ensure timely reviews of applications for medical products during the COVID-19 pandemic in line with its user fee performance goals and conducting mission critical domestic and foreign inspections to ensure compliance of manufacturing facilities with FDA quality standards. On July 16, 2020, the FDA noted that it was continuing to expedite oncology product development with its staff teleworking full-time. However, the FDA may not be able to continue its current pace and review timelines could be extended, including where a pre-approval inspection or an inspection of clinical sites is required and due to the COVID-19 pandemic and travel restrictions, the FDA is unable to complete such required inspections during the review period. As of July 2020, utilizing a rating system to assist in determining when and where it is safest to conduct such inspections based on data about the virus' trajectory in a given state and locality and the rules and guidelines that are put in place by state and local governments, FDA is either continuing to, on a case-by-case basis, conduct only mission critical inspections, or, where possible to do so safely, resuming prioritized domestic inspections, which generally include pre-approval inspections. Foreign pre-approval inspections that are not deemed mission-critical remain postponed, while those deemed mission-critical will be considered for inspection on a case-by-case basis. FDA will use similar data to inform resumption of prioritized operations abroad as it becomes feasible and advisable to do so. The FDA may not be able to maintain this pace and delays or setbacks are possible in the future. Should FDA determine that an inspection is necessary for approval and an inspection cannot be completed during the review cycle due to restrictions on travel, FDA has stated that it generally intends to issue a complete response letter. Further, if there is inadequate information to make a determination on the acceptability of a facility, FDA may defer action on the application until an inspection can be completed. In 2020, several companies announced receipt of complete response letters due to the FDA's inability to complete required inspections for their applications. Additionally, regulatory authorities outside the U.S. may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic and may experience delays in their regulatory activities. If a prolonged government shutdown or other disruption occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Future shutdowns or other disruptions could also affect other government agencies such as the SEC, which may also impact our business by delaying review of our public filings, to the extent such review is necessary, and our ability to access the public markets.

***Healthcare legislative reform measures may have a material adverse effect on our business and results of operations.***

The U.S. and many foreign jurisdictions have enacted or proposed legislative and regulatory changes affecting the healthcare system that could prevent or delay regulatory approval of our current or future product candidates or any future product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell a product for which we obtain regulatory approval. Changes in regulations, statutes or the interpretation of existing regulations could impact our business in the future by requiring, for example: (i) changes to our manufacturing arrangements, (ii) additions or modifications to product labeling, (iii) the recall or discontinuation of our products or (iv) additional record-keeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business. In the U.S., there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act, or the ACA, was passed, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacted the U.S. pharmaceutical industry. The ACA, among other things, subjects biological products to potential competition by lower-cost biosimilars, addresses a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected, increases the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extends the rebate program to individuals enrolled in Medicaid managed care organizations, establishes annual fees and taxes on manufacturers of certain branded prescription drugs, and creates a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% (increased to 70% pursuant to the Bipartisan Budget Act of 2018, effective as of 2019) point-of-sale discounts off negotiated prices of applicable brand drugs to eligible

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beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D. Since then, the ACA risk adjustment program payment parameters have been updated annually.

Members of the United States Congress and the current administration have expressed intent to pass legislation or adopt executive orders to fundamentally change or repeal parts of the ACA. While Congress has not passed comprehensive repeal legislation to date, the Tax Cuts and Jobs Act of 2017, or TCJA, essentially repealed, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." In addition, various portions of the ACA are currently undergoing legal and constitutional challenges in the United States Supreme Court. Litigation and legislation over the ACA are likely to continue, with unpredictable and uncertain results. We will continue to evaluate the effect that the ACA and its possible repeal and replacement has on our business.

Further, on January 20, 2017, an Executive Order was signed directing federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal burden on states or a cost, fee, tax, penalty or regulatory burden on individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. On October 13, 2017, an Executive Order was signed terminating the cost-sharing subsidies that reimburse insurers under the ACA. The current administration has concluded that cost-sharing reduction, or CSR, payments to insurance companies required under the ACA have not received necessary appropriations from Congress and announced that it will discontinue these payments immediately until those appropriations are made. The loss of the CSR payments is expected to increase premiums on certain policies issued by qualified health plans under the ACA. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017. The loss of the cost share reduction payments is expected to increase premiums on certain policies issued by qualified health plans under the ACA. Further, on June 14, 2018, the United States Court of Appeals for the Federal Circuit ruled that the federal government was not required to pay to third-party payors more than \$12 billion in ACA risk corridor payments that they argued were owed to them. This decision was appealed to the United States Supreme Court, which on April 27, 2020, reversed the United States Court of Appeals for the Federal Circuit's decision and remanded the case to the U.S. Court of Federal Claims, concluding the government has an obligation to pay these risk corridor payments under the relevant formula. The U.S. federal government has since started sending third-party payors owed payments. It is not clear what effect this result will have on our business, but we will continue to monitor any developments.

Moreover, on January 22, 2018, a continuing resolution on appropriations for fiscal year 2018 was approved that delayed the implementation of certain ACA-mandated fees, including the so called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices; however on December 20, 2019, the Further Consolidated Appropriations Act (H.R. 1865) was signed into law, which repeals the Cadillac tax, the health insurance provider tax, and the medical device excise tax. It is impossible to determine whether similar taxes could be instated in the future. The Bipartisan Budget Act of 2018, also amended the ACA, effective January 1, 2019, by increasing the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and closing the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole." CMS published a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. In addition, CMS has published a final rule that would give states greater flexibility, starting in 2020, in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces.

Other legislative changes have been proposed and adopted in the U.S. since the ACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by

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Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least \$1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers up to 2% per fiscal year, and, due to subsequent legislative amendments, will remain in effect through 2030 unless additional Congressional action is taken. However, pursuant to the Coronavirus Aid, Relief and Economic Security Act, or CARES Act, these Medicare sequester reductions were suspended from May 1, 2020 through December 31, 2020 due to the COVID-19 pandemic. The American Taxpayer Relief Act of 2012 among other things, reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

There has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed federal and state legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. At the federal level, the current administration's budget for fiscal year 2021 includes a \$135 billion allowance to support legislative proposals seeking to reduce drug prices, increase competition, lower out-of-pocket drug costs for patients, and increase patient access to lower-cost generic and biosimilar drugs. On March 10, 2020, the current administration sent "principles" for drug pricing to Congress, calling for legislation that would, among other things, cap Medicare Part D beneficiary out-of-pocket pharmacy expenses, provide an option to cap Medicare Part D beneficiary monthly out-of-pocket expenses, and place limits on pharmaceutical price increases. Additionally, the current administration released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of product candidates paid by consumers.

On July 24, 2020, President Trump signed four Executive Orders directing the Secretary of the U.S. Department of Health and Human Services, or HHS, to: (1) eliminate protection under an Anti-Kickback Statute safe harbor for certain retrospective price reductions provided by drug manufacturers to sponsors of Medicare Part D plans or pharmacy benefit managers that are not applied at the point-of-sale; (2) allow the importation of certain drugs from other countries through individual waivers, permit the re-importation of insulin products, and prioritize finalization of FDA's December 2019 proposed rule to permit the importation of drugs from Canada; (3) ensure that payment by the Medicare program for certain Medicare Part B drugs is not higher than the payment by other comparable countries (depending on whether pharmaceutical manufacturers agree to other measures); and (4) allow certain low-income individuals receiving insulin and epinephrine purchased by a Federally Qualified Health Center, or FQHC, as part of the 340B drug program to purchase those drugs at the discounted price paid by the FQHC. On October 1, 2020, the FDA issued its final rule allowing importation of certain prescription drugs from Canada. On September 13, 2020, President Trump signed an Executive Order directing HHS to implement a rulemaking plan to test a payment model, pursuant to which Medicare would pay, for certain high-cost prescription drugs and biological products covered by Medicare Part B, no more than the most-favored-nation price (i.e., the lowest price) after adjustments, for a pharmaceutical product that the drug manufacturer sells in a member country of the Organization for Economic Cooperation and development that has a comparable per-capita gross domestic product. Although a number of these, and other proposed measures will require authorization through additional legislation to become effective, Congress and the current administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs.

HHS has already started the process of soliciting feedback on some of these measures and, at the same time, is immediately implementing others under its existing authority. For example, in May 2019, CMS issued a final rule to allow Medicare Advantage Plans the option of using step therapy, a type of prior authorization, for Part B drugs beginning January 1, 2020. This final rule codified CMS's policy change that was effective January 1, 2019.



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Further, on May 30, 2018, the Right to Try Act, was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new product candidates that have completed a Phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a pharmaceutical manufacturer to make its product candidates available to eligible patients as a result of the Right to Try Act.

At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional health care authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other health care programs. These measures could reduce the ultimate demand for our products, once approved, or put pressure on our product pricing.

We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our current or future product candidates or additional pricing pressures. In particular any policy changes through CMS as well as local state Medicaid programs could have a significant impact on our business.

Our revenue prospects could be affected by changes in healthcare spending and policy in the U.S. and abroad. We operate in a highly regulated industry and new laws, regulations or judicial decisions, or new interpretations of existing laws, regulations or decisions, related to healthcare availability, the method of delivery or payment for healthcare products and services could negatively impact our business, operations and financial condition.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future, including repeal, replacement or significant revisions to the ACA. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for our current or future product candidates, if we obtain regulatory approval;
- our ability to set a price that we believe is fair for our products;
- our ability to obtain coverage and reimbursement approval for a product;
- our ability to generate revenue and achieve or maintain profitability;
- the level of taxes that we are required to pay; and
- the availability of capital.

Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors, which may adversely affect our future profitability.

***Our relationships with customers and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, exclusion from government healthcare programs, contractual damages, reputational harm and diminished profits and future earnings.***

Although we do not currently have any products on the market, once we begin commercializing our product candidates, we will be subject to additional healthcare statutory and regulatory requirements and enforcement by the federal government and the states and foreign governments in which we conduct our business. Healthcare

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providers, physicians and third-party payors play a primary role in the recommendation and prescription of any product candidates for which we obtain regulatory approval. Our future arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute our product candidates for which we obtain regulatory approval. Restrictions under applicable federal and state healthcare laws and regulations, include the following:

- the federal Anti-Kickback Statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federal and state healthcare programs such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. Violations are subject to civil and criminal fines and penalties for each violation, plus up to three times the remuneration involved, imprisonment of up to ten years, and exclusion from government healthcare programs. The Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers, on the one hand, and prescribers, purchasers and formulary managers, on the other. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution;
- the federal civil and criminal false claims and civil monetary penalties laws, including the federal False Claims Act, or FCA, imposes criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. Manufacturers can be held liable under the FCA even when they do not submit claims directly to government payors if they are deemed to “cause” the submission of false or fraudulent claims. In addition, the government may assert that a claim including items and services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program (e.g. public or private), or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services; similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- the federal physician payment transparency requirements, sometimes referred to as the “Sunshine Act” under the ACA, require manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children’s Health Insurance Program to report to HHS information related to transfers of value made to physicians (currently defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests of such physicians and their immediate family members. Effective January 1, 2022, these reporting obligations will extend to include transfers of value made to certain non-physician providers such as physician assistants and nurse practitioners;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and its implementing regulations, impose obligations on certain covered entity healthcare providers, health plans, and healthcare clearinghouses as well as their business associates that perform certain services involving the use or disclosure of individually identifiable health information, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or

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injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions;

- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;
- federal price reporting laws, which require manufacturers to calculate and report complex pricing metrics to government programs, where such reported prices may be used in the calculation of reimbursement and/or discounts on approved products; and
- analogous state laws and regulations, such as state anti-kickback and false claims laws may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers. Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures. Further, many state laws governing the privacy and security of health information in certain circumstances, differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Ensuring that our future business arrangements with third parties comply with applicable healthcare laws and regulations could involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations, including anticipated activities to be conducted by our sales team, were to be found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we expect to do business is found not to be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

***If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.***

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological and radioactive materials. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological, hazardous or radioactive materials.

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***Even if we receive regulatory approval for any of our product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to post-market study requirements, marketing and labeling restrictions, and even recall or market withdrawal if unanticipated safety issues are discovered following approval. In addition, we may be subject to penalties or other enforcement action if we fail to comply with regulatory requirements.***

If the FDA or a comparable foreign regulatory authority approves any of our product candidates, the manufacturing processes, labeling, packaging, distribution, import, export, adverse event reporting, storage, advertising, promotion, monitoring, and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, establishment registration and listing, as well as continued compliance with cGMPs and GCPs for any clinical trials that we conduct post-approval. Any regulatory approvals that we receive for our product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing studies, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the product. The FDA may also require a REMS in order to approve our product candidates, which could entail requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- manufacturing delays and supply disruptions where regulatory inspections identify observations of noncompliance requiring remediation;
- revisions to the labeling, including limitation on approved uses or the addition of additional warnings, contraindications or other safety information, including boxed warnings;
- imposition of a REMS which may include distribution or use restrictions;
- requirements to conduct additional post-market clinical trials to assess the safety of the product;
- clinical trial holds;
- fines, warning letters or other regulatory enforcement action;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or suspension or revocation of approvals;
- product seizure or detention, or refusal to permit the import or export of products; and
- injunctions or the imposition of civil or criminal penalties.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any regulatory approval that we may have obtained, which would adversely affect our business, prospects and ability to achieve or sustain profitability.

***European data collection is governed by restrictive regulations governing the use, processing and cross-border transfer of personal information.***

In the event we decide to conduct clinical trials or continue to enroll subjects in our ongoing or future clinical trials, we may be subject to additional privacy restrictions. The collection, use, storage, disclosure, transfer, or

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other processing of personal data regarding individuals in the EU, including personal health data, is subject to the EU General Data Protection Regulation, or GDPR. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches, and taking certain measures when engaging third-party processors. Compliance with the GDPR will be a rigorous and time-intensive process that may increase our cost of doing business or require us to change our business practices, and despite those efforts, there is a risk that we may be subject to fines and penalties, litigation, and reputational harm in connection with our European activities.

***Laws and regulations governing any international operations we may have in the future may preclude us from developing, manufacturing and selling certain products outside of the United States and require us to develop and implement costly compliance programs.***

If we expand our operations outside of the United States, we must dedicate additional resources to comply with numerous laws and regulations in each jurisdiction in which we plan to operate. The Foreign Corrupt Practices Act, or FCPA, prohibits any U.S. individual or business from paying, offering, authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with certain accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

Compliance with the FCPA is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the pharmaceutical industry, because, in many countries, hospitals are operated by the government, and doctors and other hospital employees are considered foreign officials. Certain payments to hospitals in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions.

Various laws, regulations and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-U.S. nationals, of information classified for national security purposes, as well as certain products and technical data relating to those products. If we expand our presence outside of the United States, it will require us to dedicate additional resources to comply with these laws, and these laws may preclude us from developing, manufacturing, or selling certain products and product candidates outside of the United States, which could limit our growth potential and increase our development costs.

The failure to comply with laws governing international business practices may result in substantial civil and criminal penalties and suspension or debarment from government contracting. The Securities and Exchange Commission, or SEC, also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions.

### **Risks Relating to Employee Matters and Managing Growth**

***Our future success depends on our ability to retain key executives and experienced scientists and to attract, retain and motivate qualified personnel.***

We are highly dependent on many of our key employees and members of our executive management team as well as the other principal members of our management, scientific and clinical team. Although we have entered into employment letter agreements with certain of our executive officers, each of them may terminate their employment with us at any time. We do not maintain "key person" insurance for any of our executives or other

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employees. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

Recruiting and retaining qualified scientific, clinical, manufacturing and sales and marketing personnel will also be critical to our success. The loss of the services of our executive officers or other key employees, including temporary loss due to illness, could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval of and commercialize products. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. Failure to succeed in clinical trials may make it more challenging to recruit and retain qualified scientific personnel.

In particular, we have experienced a very competitive hiring environment in Boston, Massachusetts, where we are headquartered. Many of the other pharmaceutical companies that we compete against for qualified personnel have greater financial and other resources, different risk profiles and a longer history in the industry than we do. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high-quality candidates than what we have to offer. If we are unable to continue to attract and retain high-quality personnel, the rate and success with which we can discover and develop product candidates and our business will be limited.

***We may be unable to adequately protect our information systems from cyberattacks, which could result in the disclosure of confidential or proprietary information, including personal data, damage our reputation, and subject us to significant financial and legal exposure.***

We rely on information technology systems that we or our third-party providers operate to process, transmit and store electronic information in our day-to-day operations. In connection with our product discovery efforts, we may collect and use a variety of personal data, such as names, mailing addresses, email addresses, phone numbers and clinical trial information. A successful cyberattack could result in the theft or destruction of intellectual property, data, or other misappropriation of assets, or otherwise compromise our confidential or proprietary information and disrupt our operations. Cyberattacks are increasing in their frequency, sophistication and intensity, and have become increasingly difficult to detect. Cyberattacks could include wrongful conduct by hostile foreign governments, industrial espionage, wire fraud and other forms of cyber fraud, the deployment of harmful malware, denial-of-service, social engineering fraud or other means to threaten data security, confidentiality, integrity and availability. A successful cyberattack could cause serious negative consequences for us, including, without limitation, the disruption of operations, the misappropriation of confidential business information, including financial information, trade secrets, financial loss and the disclosure of corporate strategic plans. Although we devote resources to protect our information systems, we realize that cyberattacks are a threat, and there can be no assurance that our efforts will prevent information security breaches that would result in business, legal, financial or reputational harm to us, or would have a material adverse effect on our results of operations and financial condition. Any failure to prevent or mitigate security breaches or improper access to, use of, or disclosure of our clinical data or patients' personal data could result in significant liability under state (e.g., state breach notification laws), federal (e.g., HIPAA, as amended by HITECH), and international law (e.g., the GDPR) and may cause a material adverse impact to our reputation, affect our ability to conduct new studies and potentially disrupt our business.

We rely on our third-party providers to implement effective security measures and identify and correct for any such failures, deficiencies or breaches. If we or our third-party providers fail to maintain or protect our information technology systems and data integrity effectively or fail to anticipate, plan for or manage significant disruptions to our information technology systems, we or our third-party providers could have difficulty preventing, detecting and controlling such cyber-attacks and any such attacks could result in the losses described above as well as disputes with physicians, patients and our partners, regulatory sanctions or penalties, increases in operating expenses, expenses or lost revenue or other adverse consequences, any of which could have a material adverse effect on our business, results of operations, financial condition, prospects and cash flows. Any failure by such third parties to prevent or mitigate security breaches or improper access to or disclosure of such information could have similarly adverse consequences for us. If we are unable to prevent or mitigate the impact of such security or data privacy breaches, we could be exposed to litigation and governmental investigations, which could lead to a potential disruption to our business. By way of example, the California Consumer Privacy Act, or CCPA, which went into effect on January 1, 2020, creates individual privacy rights for California consumers and increases the privacy and security obligations of entities handling certain personal data. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. In March 2020, the California State Attorney General has proposed varying versions of companion draft regulations which are not yet finalized. Despite the delay in adopting regulations, the California State Attorney General will commence enforcement actions against violators beginning July 1, 2020. The CCPA may increase our compliance costs and potential liability, and many similar laws have been proposed at the federal level and in other states. By way of example regarding foreign laws and regulations with respect to data privacy and security, the GDPR went into effect in the EU in May 2018 and introduces strict requirements for processing the personal data of EU data subjects. Companies that must comply with the GDPR face increased compliance obligations and risk, including more robust regulatory enforcement of data protection requirements and potential fines for noncompliance of up to €20 million or 4% of the annual global revenue of the noncompliant company, whichever is greater.

If we or third-party CMOs, CROs or other contractors or consultants fail to comply with U.S. and international data protection laws and regulations, it could result in government enforcement actions (which could include civil or criminal penalties), private litigation, and/or adverse publicity and could negatively affect our operating results and business. Moreover, clinical trial subjects about whom we or our potential collaborators obtain information, as well as the providers who share this information with us, may contractually limit our ability to use and disclose the information. Claims that we have violated individuals' privacy rights, failed to comply with data protection laws, or breached our contractual obligations, even if we are not found liable, could be expensive and time-consuming to defend and could result in adverse publicity that could harm our business.

***We may be unable to successfully integrate acquisitions, which may adversely impact our operations.***

We have in the past and in the future may continue to acquire complementary businesses or technologies. Acquired technologies, products or businesses may not perform as we expect, and we may fail to realize anticipated synergies or results. In addition, our acquisition strategy may divert management's attention away from our existing business, and expose us to unanticipated problems or legal liabilities, including responsibility as a successor for undisclosed or contingent liabilities of acquired businesses or assets.

We have successfully integrated our past acquisitions of Arrys Therapeutics or Amplify Medicines, however, if we are unsuccessful in integrating any future acquisitions, it could impede us from realizing all of the benefits of those acquisitions and could weaken our business operations or future prospectus. The integration process may disrupt our business and, if new technologies, products or businesses are not implemented effectively, may preclude the realization of the full benefits expected by us and could harm our results of operations. In addition, the overall integration of new technologies, products or businesses may result in unanticipated problems, expenses, liabilities and competitive responses. The difficulties of integrating an acquisition include, among other things:

- issues in integrating the target company's technologies, product candidates or capabilities with ours;
- maintaining employee morale and retaining key employees;

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- integrating the culture of the target company with ours;
- preserving important strategic relationships and collaborations; and
- consolidating corporate and administrative infrastructures and eliminating duplicative operations.

In addition, even if the operations of an acquisition are integrated successfully, we may not realize the full benefits of the acquisition, including the synergies, pipeline expansion or growth opportunities that we expect. These benefits may not be achieved within the anticipated time frame, or at all.

***We expect to expand our development and regulatory capabilities and potentially implement sales, marketing and distribution capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.***

As of November 30, 2020, we had 29 full-time employees. We expect to experience significant growth in the number of our employees and the scope of our operations, particularly as we function as a public company and in the areas of product development, regulatory affairs and, if any of our product candidates receives regulatory approval, sales, marketing and distribution. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

We may acquire additional businesses or products, form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business. If we acquire businesses with promising markets or technologies, we may not be able to realize the benefit of acquiring such businesses if we are unable to successfully integrate them with our existing operations and company culture. We may encounter numerous difficulties in developing, manufacturing and marketing any new products resulting from a strategic alliance or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. We cannot assure you that, following any such acquisition, we will achieve the expected synergies to justify the transaction.

### **Risks Related to Our Common Stock and This Offering**

***Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.***

If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market after the lock-up and other legal restrictions on resale discussed in this prospectus lapse, the market price of our common stock could decline. Based upon the number of shares of common stock, on an as-converted basis, outstanding as of December 31, 2020, upon the completion of this offering, we will have outstanding a total of \_\_\_\_\_ shares of common stock, and assuming no exercise of the underwriters' option to purchase additional shares. Of these shares, as of the date of this prospectus, approximately \_\_\_\_\_ shares of our common stock, plus any shares sold upon exercise of the underwriters' option to purchase additional shares, will be freely tradable, without restriction, in the public market immediately following this offering, assuming that current stockholders do not purchase shares in this offering. The representatives of the underwriters, however, may, in their sole discretion, permit our officers, directors and other stockholders who are subject to these lock-up agreements to sell shares prior to the expiration of the lock-up agreements.

The lock-up agreements pertaining to this offering will expire 180 days from the date of this prospectus. After the lock-up agreements expire, based upon the number of shares of common stock, on an as-converted basis,



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outstanding as of December 31, 2020, up to an additional \_\_\_\_\_ shares of common stock will be eligible for sale in the public market, \_\_\_\_\_ % of which shares are held by directors, executive officers and other affiliates and will be subject to certain limitations of Rule 144 under the Securities Act of 1933, as amended, or the Securities Act.

Upon completion of this offering, \_\_\_\_\_ shares of common stock that are either subject to outstanding options or reserved for future issuance under our equity incentive plans will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements and Rule 144 and Rule 701 under the Securities Act. If these additional shares of common stock are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

After this offering, the holders of approximately \_\_\_\_\_ shares of our common stock will be entitled to rights with respect to the registration of their shares under the Securities Act, subject to the lock-up agreements described above. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates. Any sales of securities by these stockholders could have a material adverse effect on the market our common stock.

***Our executive officers, directors, principal stockholders and their affiliates will continue to exercise significant control over our company after this offering, which will limit your ability to influence corporate matters and could delay or prevent a change in corporate control.***

Immediately following the completion of this offering, and disregarding any shares of common stock that they purchase in this offering, the existing holdings of our executive officers, directors, principal stockholders and their affiliates, including entities affiliated with Atlas Ventures, OrbiMed, Fidelity Management & Research Company, Celgene Corporation (BMS) and Omega Funds, will represent beneficial ownership, in the aggregate, of approximately \_\_\_\_\_ % of our outstanding common stock, assuming no exercise of the underwriters' option to acquire additional common stock in this offering and assuming we issue the number of shares of common stock as set forth on the cover page of this prospectus. As a result, these stockholders, if they act together, will be able to influence our management and affairs and control the outcome of matters submitted to our stockholders for approval, including the election of directors and any sale, merger, consolidation, or sale of all or substantially all of our assets. These stockholders acquired their shares of common stock for substantially less than the price of the shares of common stock being acquired in this offering, and these stockholders may have interests, with respect to their common stock, that are different from those of investors in this offering and the concentration of voting power among these stockholders may have an adverse effect on the price of our common stock. In addition, this concentration of ownership might adversely affect the market price of our common stock by:

- delaying, deferring or preventing a change of control of us;
- impeding a merger, consolidation, takeover or other business combination involving us; or
- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us.

See "Principal Stockholders" in this prospectus for more information regarding the ownership of our outstanding common stock by our executive officers, directors, principal stockholders and their affiliates.

***If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares.***

You will suffer immediate and substantial dilution in the net tangible book value of the common stock you purchase in this offering. Assuming an initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, purchasers of common stock in this offering will experience immediate dilution of \$ \_\_\_\_\_ per share in net tangible book value of the common stock. In

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addition, investors purchasing common stock in this offering will contribute % of the total amount invested by stockholders since inception but will only own % of the shares of common stock outstanding. In the past, we issued options and other securities to acquire common stock at prices significantly below the initial public offering price. To the extent these outstanding securities are ultimately exercised, investors purchasing common stock in this offering will sustain further dilution. See “Dilution” for a more detailed description of the dilution to new investors in the offering.

***We have broad discretion in how we use the proceeds of this offering and may not use these proceeds effectively, which could affect our results of operations and cause our stock price to decline.***

We will have considerable discretion in the application of the net proceeds of this offering. We intend to use the net proceeds from this offering to fund discovery and clinical development efforts as well as further expansion of our manufacturing capabilities, and infrastructure to support our pipeline, and to fund new and ongoing research activities, working capital and other general corporate purposes, which may include funding for the hiring of additional personnel, capital expenditures and the costs of operating as a public company. As a result, investors will be relying upon management’s judgment with only limited information about our specific intentions for the use of the balance of the net proceeds of this offering. We may use the net proceeds for purposes that do not yield a significant return or any return at all for our stockholders. In addition, pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

***Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.***

Under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an “ownership change” (generally defined as a greater than 50 percentage point change (by value) in the ownership of its equity over a three year period), the corporation’s ability to use its pre-change net operating loss carryforwards and certain other pre-change tax attributes to offset its post-change income may be limited. We may have experienced such ownership changes in the past, and we may experience ownership changes in the future as a result of this offering or subsequent shifts in our stock ownership, some of which are outside our control. As of December 31, 2020, we had federal net operating loss carryforwards of approximately \$ , and our ability to utilize those net operating loss carryforwards could be limited by an “ownership change” as described above, which could result in increased tax liability to us. Furthermore, our ability to utilize our NOLs or credits is conditioned upon our attaining profitability and generating U.S. federal and state taxable income. As a result, the amount of the net operating loss and tax credit carryforwards presented in our consolidated financial statements could be limited and may expire unutilized. Federal net operating loss carryforwards generated in taxable years beginning after December 31, 2017 will not be subject to expiration. However, any such net operating loss carryforwards may only offset 80% of our annual taxable income in taxable years beginning after December 31, 2020.

***Comprehensive tax reform legislation could adversely affect our business and financial condition.***

The rules dealing with U.S. federal, state and local income taxation are constantly under review by persons involved in the legislative process and by the Internal Revenue Service, or IRS, and the U.S. Treasury Department. Changes to tax laws (which changes may have retroactive application) could adversely affect us or holders of our common stock. In recent years, many such changes have been made and changes are likely to continue to occur in the future. For example, the TCJA was enacted in 2017 and made significant changes to corporate taxation, including the reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, the limitation of the tax deduction for net interest expense to 30% of adjusted taxable income (except for certain small businesses), the limitation of the deduction for net operating losses from taxable years beginning after December 31, 2017 to 80% of current year taxable income and the elimination of net operating loss carrybacks generated in taxable years ending after December 31, 2017 (though any such net operating losses may be carried forward indefinitely), and the modification or repeal of many business deductions and credits.

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Additionally, on March 27, 2020, President Trump signed into law the Coronavirus Aid, Relief, and Economic Security Act, which, among other things, suspends the 80% limitation on the deduction for net operating losses in taxable years beginning before January 1, 2021, permits a 5-year carryback of net operating losses arising in taxable years beginning after December 31, 2017 and before January 1, 2021, and generally caps the limitation on the deduction for net interest expense at 50% of adjusted taxable income for taxable years beginning in 2019 and 2020.

It cannot be predicted whether, when, in what form, or with what effective dates, new tax laws may be enacted, or regulations and rulings may be promulgated or issued under existing or new tax laws, which could result in an increase in our or our shareholders' tax liability or require changes in the manner in which we operate in order to minimize or mitigate any adverse effects of changes in tax law or in the interpretation thereof.

***Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.***

Our fourth amended and restated certificate of incorporation and amended and restated bylaws, which are to become effective at or prior to the completion of this offering, contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

- a board of directors divided into three classes serving staggered three-year terms, such that not all members of the board will be elected at one time;
- a prohibition on stockholder action through written consent, which requires that all stockholder actions be taken at a meeting of our stockholders;
- a requirement that special meetings of the stockholders may be called only by the board of directors acting pursuant to a resolution approved by the affirmative vote of a majority of the directors then in office, and special meetings of stockholders may not be called by any other person or persons;
- advance notice requirements for stockholder proposals and nominations for election to our board of directors;
- a requirement that no member of our board of directors may be removed from office by our stockholders except for cause and, in addition to any other vote required by law, upon the approval of not less than two-thirds (2/3) of all outstanding shares of our voting stock then entitled to vote in the election of directors;
- a requirement of approval of not less than a majority of all outstanding shares of our voting stock to amend any bylaws by stockholder action and not less than two-thirds (2/3) of all outstanding shares of our voting stock to amend specific provisions of our certificate of incorporation; and
- the authority of the board of directors to issue preferred stock on terms determined by the board of directors without stockholder approval, which preferred stock may include rights superior to the rights of the holders of common stock.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These anti-takeover provisions and other provisions in our fourth amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors and could also delay or impede a merger, tender offer or proxy contest involving our company. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors of your choosing or cause us to take other corporate actions you desire. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

***Our bylaws to be effective upon the consummation of this offering designate certain courts as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees.***

Our bylaws that will become effective upon the completion of this offering provide that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for any state law claim for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers, and employees to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws (including the interpretation, validity or enforceability thereof) or (iv) any action asserting a claim that is governed by the internal affairs doctrine, in each case subject to the Court of Chancery having personal jurisdiction over the indispensable parties named as defendants therein, or the Delaware Forum Provision. The Delaware Forum Provision will not apply to any causes of action arising under the Securities Act or the Exchange Act. Our bylaws further provide that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, or the Federal Forum Provision. In addition, our bylaws that will become effective upon the completion of this offering will provide that any person or entity purchasing or otherwise acquiring any interest in shares of our common stock is deemed to have notice of and consented to the foregoing provisions; provided, however, that stockholders cannot and will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

We recognize that the Delaware Forum Provision in our bylaws may impose additional litigation costs on stockholders in pursuing any such claims, particularly if the stockholders do not reside in or near the State of Delaware. Additionally, the forum selection clauses in our amended and restated bylaws may limit our stockholders' ability to bring a claim in a forum that they find favorable for disputes with us or our directors, officers or employees, which may discourage such lawsuits against us and our directors, officers and employees even though an action, if successful, might benefit our stockholders. In addition, while the Delaware Supreme Court ruled in March 2020 that federal forum selection provisions purporting to require claims under the Securities Act be brought in federal court were "facially valid" under Delaware law, there is uncertainty as to whether other courts will enforce our Federal Forum Provision. If the Federal Forum Provision is found to be unenforceable, we may incur additional costs associated with resolving such matters. The Federal Forum Provision may also impose additional litigation costs on stockholders who assert that the provision is not enforceable or invalid. The Court of Chancery of the State of Delaware and the federal district courts of the United States may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our stockholders.

#### **General Risks**

***We are subject to certain U.S. and foreign anti-corruption, anti-money laundering, export control, sanctions, and other trade laws and regulations. We can face serious consequences for violations.***

Among other matters, U.S. and foreign anti-corruption, anti-money laundering, export control, sanctions, and other trade laws and regulations, which are collectively referred to as Trade Laws, prohibit companies and their employees, agents, clinical research organizations, legal counsel, accountants, consultants, contractors, and other partners from authorizing, promising, offering, providing, soliciting, or receiving directly or indirectly, corrupt or improper payments or anything else of value to or from recipients in the public or private sector. Violations of Trade Laws can result in substantial criminal fines and civil penalties, imprisonment, the loss of trade privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We also expect our non-U.S. activities to increase in

time. We plan to engage third parties for clinical trials and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals and we can be held liable for the corrupt or other illegal activities of our personnel, agents, or partners, even if we do not explicitly authorize or have prior knowledge of such activities.

***Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.***

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. For example, in 2008, the global financial crisis caused extreme volatility and disruptions in the capital and credit markets and the current COVID-19 pandemic has caused significant volatility and uncertainty in U.S. and international markets. See “Risks Related to the Development of our Targeted Oncology and Other Programs and Product Candidates—The COVID-19 pandemic, or a similar pandemic, epidemic, or outbreak of an infectious disease may materially and adversely affect our business and our financial results and could cause a disruption to the development of our product candidates.” A severe or prolonged economic downturn could result in a variety of risks to our business, including, weakened demand for our product candidates and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our services. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

***Our employees, principal investigators, CROs and consultants may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.***

We are exposed to the risk that our employees, principal investigators, CROs and consultants may engage in fraudulent conduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violate the regulations of the FDA and other regulatory authorities, including those laws requiring the reporting of true, complete and accurate information to such authorities; healthcare fraud and abuse laws and regulations in the United States and abroad; or laws that require the reporting of financial information or data accurately. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Activities subject to these laws also involve the improper use of information obtained in the course of clinical trials or creating fraudulent data in our preclinical studies or clinical trials, which could result in regulatory sanctions and cause serious harm to our reputation. We intend to adopt, prior to the completion of this offering, a code of conduct applicable to all of our employees, but it is not always possible to identify and deter misconduct by employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. Additionally, we are subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

***An active trading market for our common stock may not develop, and you may not be able to resell your shares at or above the initial public offering price.***

Prior to this offering, there has been no public market for shares of our common stock. Although we anticipate that our common stock will be approved for listing on The Nasdaq Global Market, or Nasdaq, an active trading market for our shares may never develop or be sustained following this offering. The initial public offering price of our common stock will be determined through negotiations between us and the underwriters. This initial public offering price may not be indicative of the market price of our common stock after this offering. In the absence of an active trading market for our common stock, investors may not be able to sell their common stock at or above the initial public offering price or at the time that they would like to sell.

***We are an “emerging growth company” as defined in the JOBS Act and will be able to avail ourselves of reduced disclosure requirements applicable to emerging growth companies, which could make our common stock less attractive to investors and adversely affect the market price of our common stock.***

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. We will remain an emerging growth company until the earlier of (i) the last day of the fiscal year in which we have total annual gross revenues of \$1.07 billion or more; (ii) the last day of the fiscal year following the fifth anniversary of the date of the completion of this offering; (iii) the date on which we have issued more than \$1 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission, which means the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the prior June 30th. For so long as we remain an emerging growth company, we are permitted and intend to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include:

- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements;
- providing only two years of audited financial statements in addition to any required unaudited interim financial statements and a correspondingly reduced “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure;
- reduced disclosure obligations regarding executive compensation; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved. In this prospectus, we have not included all of the executive compensation-related information that would be required if we were not an emerging growth company.

Although we are still evaluating the JOBS Act, we currently intend to take advantage of some, but not all, of the available exemptions available to us so long as we qualify as an “emerging growth company.” We have taken advantage of reduced reporting burdens in this prospectus. In particular, we have provided only two years of audited financial statements and have not included all of the executive compensation information that would be required if we were not an emerging growth company. We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period for new or revised accounting standards during the period in which we remain an emerging growth company; however, we may adopt certain new or revised accounting standards early.

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We have elected to avail ourselves of this exemption and, therefore, we are not subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. As a result, changes in rules of U.S. generally accepted accounting principles or their interpretation, the adoption of new guidance or the application of existing guidance to changes in our business could significantly affect our financial position and results of operations. In addition, our independent registered public accounting firm will not be required to provide an attestation report on the effectiveness of our internal control over financial reporting so long as we qualify as an “emerging growth company,” which may increase the risk that material weaknesses or significant deficiencies in our internal control over financial reporting go undetected. Likewise, so long as we qualify as an “emerging growth company,” we may elect not to provide you with certain information, including certain financial information and certain information regarding compensation of our executive officers, that we would otherwise have been required to provide in filings we make with the SEC, which may make it more difficult for investors and securities analysts to evaluate our company. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock, and our stock price may be more volatile and may decline.

***Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be your sole source of gain.***

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. In addition, the terms of any future debt agreements may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

***The price of our common stock may be volatile and fluctuate substantially, which could result in substantial losses for purchasers of our common stock in this offering.***

Our stock price is likely to be volatile. The stock market in general, and the market for biopharmaceutical companies in particular, have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, you may not be able to sell your common stock at or above the initial public offering price. The market price for our common stock may be influenced by many factors, including:

- the success of competitive products or technologies;
- advancement of our preclinical programs, such as our targeted oncology programs, into clinical testing;
- results of clinical trials of our product candidates or those of our competitors;
- regulatory or legal developments in the United States and other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to any of our programs and product candidates or preclinical and clinical development programs;
- the results of our efforts to discover, develop, acquire or in-license additional product candidates or products;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems;

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- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions; and
- the other factors described in this “Risk Factors” section.

***We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives.***

As a public company, and particularly after we are no longer an “emerging growth company,” we will incur significant legal, accounting and other expenses that we did not incur as a private company. In addition, the Sarbanes-Oxley Act of 2002 and rules subsequently implemented by the SEC and Nasdaq have imposed various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance.

Pursuant to Section 404, we will be required to furnish a report by our management on our internal control over financial reporting, including an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that neither we nor our independent registered public accounting firm will be able to conclude within the prescribed timeframe that our internal control over financial reporting is effective as required by Section 404. This could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements. In addition, if we are not able to continue to meet these requirements, we may not be able to remain listed on Nasdaq.

***Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.***

Upon completion of this offering, we will become subject to the periodic reporting requirements of the Securities Exchange Act of 1934, or the Exchange Act. We designed our disclosure controls and procedures to reasonably assure that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

***If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our stock, the price of our stock could decline.***

The trading market for our common stock will rely in part on the research and reports that industry or financial analysts publish about us or our business. We may never obtain research coverage by industry or financial



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analysts. If no or few analysts commence coverage of us, the trading price of our stock would likely decrease. Even if we do obtain analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our stock, the price of our stock could decline. If one or more of these analysts cease to cover our stock, we could lose visibility in the market for our stock, which in turn could cause our stock price to decline.

***We may be subject to securities litigation, which is expensive and could divert management attention.***

The market price of our common stock may be volatile. The stock market in general, and Nasdaq and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the sections entitled “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and “Business,” contains express or implied forward-looking statements that are based on our management’s belief and assumptions and on information currently available to our management. Although we believe that the expectations reflected in these forward-looking statements are reasonable, these statements relate to future events or our future operational or financial performance, and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Forward-looking statements in this prospectus include, but are not limited to, statements about:

- the initiation, timing, progress, results, and cost of our research and development programs and our current and future preclinical studies and clinical trials, including statements regarding the timing of initiation and completion of studies or trials and related preparatory work, the period during which the results of the trials will become available, and our research and development programs;
- our ability to efficiently discover and develop product candidates;
- our ability and the potential to successfully manufacture our drug substances and product candidates for preclinical use, for clinical trials and on a larger scale for commercial use, if approved;
- the ability and willingness of our third-party strategic collaborators to continue research and development activities relating to our development candidates and product candidates;
- our ability to obtain funding for our operations necessary to complete further development and commercialization of our product candidates;
- our ability to obtain and maintain regulatory approval of our product candidates;
- our ability to commercialize our products, if approved;
- the pricing and reimbursement of our product candidates, if approved;
- the implementation of our business model, and strategic plans for our business and product candidates;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates;
- estimates of our future expenses, revenue, capital requirements, and our needs for additional financing;
- the potential benefits of strategic collaboration agreements, our ability to enter into strategic collaborations or arrangements, and our ability to attract collaborators with development, regulatory and commercialization expertise;
- future agreements with third parties in connection with the commercialization of product candidates and any other approved product;
- the size and growth potential of the markets for our product candidates, and our ability to serve those markets;
- our financial performance;
- the rate and degree of market acceptance of our product candidates;
- regulatory developments in the United States and foreign countries;
- our ability to contract with third-party suppliers and manufacturers and their ability to perform adequately;
- our ability to produce our products or product candidates with advantages in turnaround times or manufacturing cost;

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- the success of competing therapies that are or may become available;
- our ability to attract and retain key scientific or management personnel;
- the impact of laws and regulations;
- our use of the proceeds from this offering;
- developments relating to our competitors and our industry;
- the effect of the COVID-19 pandemic, including mitigation efforts and economic effects, on any of the foregoing or other aspects of our business operations, including but not limited to our preclinical studies and clinical trials and any future studies or trials; and
- other risks and uncertainties, including those listed under the caption “Risk Factors.”

In some cases, you can identify forward-looking statements by terminology such as “may,” “should,” “expects,” “intends,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “potential,” “continue” or the negative of these terms or other comparable terminology. These statements are only predictions. You should not place undue reliance on forward-looking statements because they involve known and unknown risks, uncertainties, and other factors, which are, in some cases, beyond our control and which could materially affect results. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under the section titled “Risk Factors” and elsewhere in this prospectus. If one or more of these risks or uncertainties occur, or if our underlying assumptions prove to be incorrect, actual events or results may vary significantly from those implied or projected by the forward-looking statements. No forward-looking statement is a guarantee of future performance. You should read this prospectus and the documents that we reference in this prospectus and have filed with the Securities and Exchange Commission as exhibits to the registration statement, of which this prospectus forms a part, completely and with the understanding that our actual future results may be materially different from any future results expressed or implied by these forward-looking statements.

The forward-looking statements in this prospectus represent our views as of the date of this prospectus. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should therefore not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

This prospectus also contains estimates, projections and other information concerning our industry, our business and the markets for our programs and product candidates. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances that are assumed in this information. Unless otherwise expressly stated, we obtained this industry, business, market, and other data from our own internal estimates and research as well as from reports, research surveys, studies, and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources. While we are not aware of any misstatements regarding any third-party information presented in this prospectus, their estimates, in particular, as they relate to projections, involve numerous assumptions, are subject to risks and uncertainties and are subject to change based on various factors, including those discussed under the section titled “Risk Factors” and elsewhere in this prospectus.

## USE OF PROCEEDS

We estimate that our net proceeds from the sale of shares of our common stock in this offering will be approximately \$            million, or \$            million if the underwriters exercise in full their option to purchase additional shares, assuming an initial public offering price of \$            per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

A \$1.00 increase (decrease) in the assumed initial public offering price of \$            per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) our net proceeds from this offering by \$            million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A 1.0 million share increase (decrease) in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) our net proceeds from this offering by \$            million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. This information is illustrative only and will depend on the actual initial public offering price and other terms of this offering determined at pricing. We do not expect that a change in the initial price to the public or the number of shares by these amounts would have a material effect on uses of the proceeds from this offering, although a decrease in the initial offering price without a corresponding increase in the number of shares offered may accelerate the time at which we will need to seek additional capital.

We expect to use our net proceeds from this offering, together with our existing cash and cash equivalents, as follows:

- approximately \$            million to \$            million to advance the continued development of IK-930; including the completion of IND-enabling studies and completion of Phase 1 clinical trial(s);
- approximately \$            million to \$            million to advance the development of our ERK5 program; including nomination of a development candidate and initiation of Phase 1 clinical trial(s);
- approximately \$            million to \$            million to advance the clinical development of IK-175 and IK-412, our two programs partnered with BMS, through the completion of the ongoing Phase 1b clinical trials for each of program;
- approximately \$            million to \$            million to advance the clinical development of IK-007; including the completion of the ongoing Phase 1b clinical trial in MSS CRC;
- approximately \$            million to \$            million to fund further development of our preclinical programs towards IND filings and/or into clinical trials; and
- The remaining proceeds for general corporate purposes, which may include the hiring of additional personnel, capital expenditures, the in-licensing or acquisition of assets in line with our strategy and the costs of operating as a public company.

Our expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the amounts that we will actually spend on the uses set forth above and we expect that we will require additional funds in order to fully accomplish the specified uses of the proceeds of this offering. We may also use a portion of the net proceeds to in-license, acquire, or invest in complementary businesses or technologies to continue to build our pipeline, research and development capabilities and our intellectual property position, although we currently have no agreements, commitments, or understandings with respect to any such transaction.

Based on our current plans, we believe that our existing cash and cash equivalents, together with the anticipated net proceeds from this offering, will enable us to fund our operating expenses and capital expenditure

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requirements into . The expected net proceeds from this offering will not be sufficient for us to fund any of our product candidates through regulatory approval, and we will need to raise substantial additional capital to complete the development and commercialization of our product candidates.

Due to the many inherent uncertainties in the development of our programs and product candidates, the amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our research and development, the timing of patient enrollment and evolving regulatory requirements, the timing and success of preclinical studies, our ongoing clinical trials or clinical trials we may commence in the future, the timing of regulatory submissions, any strategic alliances that we may enter into with third parties for our product candidates or strategic opportunities that become available to us, and any unforeseen cash needs.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation instruments, including short-term and long-term interest-bearing instruments, investment-grade securities, and direct or guaranteed obligations of the U.S. government. We cannot predict whether the proceeds invested will yield a favorable return. Our management will retain broad discretion in the application of the net proceeds we receive from our initial public offering, and investors will be relying on the judgment of our management regarding the application of the net proceeds.

## **DIVIDEND POLICY**

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings to fund the growth and development of our business. We do not intend to pay cash dividends to our stockholders in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions, and other factors that our board of directors may deem relevant. Investors should not purchase our common stock with the expectation of receiving cash dividends.

## CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of September 30, 2020:

- on an actual basis;
- on a pro forma basis to give effect to (i) the acquisition of Amplify, which occurred on October 1, 2020, which includes the issuance of 7,863,094 shares of our Series A-2 preferred stock and 3,048,764 shares of common stock, the recognition of \$10.7 million of expense related to the write-off of acquired in-process research and development assets with no future alternative use, and the recognition of other assets acquired and liabilities assumed, (ii) the issuance of 85,806,214 shares of our Series B preferred stock which occurred on December 21, 2020 for net proceeds of \$116.4 million, and (iii) the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 169,396,576 shares of common stock immediately prior to the completion of this offering; and
- on a pro forma as adjusted basis to give further effect to our sale in this offering of \_\_\_\_\_ shares of common stock at an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma as adjusted information below is illustrative only, and our capitalization following the completion of this offering will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing.

The following table should be read together with “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” “Description of Capital Stock,” and the consolidated financial statements and related notes appearing elsewhere in this prospectus.

	As of September 30, 2020		
	Actual	Pro Forma	Pro Forma As Adjusted(1)
	(in thousands, except share and per share data)		
Cash and cash equivalents	\$ 55,860	\$ 175,781	\$ _____
Redeemable convertible preferred stock (Series A and A-1), \$0.001 par value, 75,727,268 shares authorized, issued and outstanding, actual (liquidation preference of \$75,727,268 as of September 30, 2020); no shares authorized, issued and outstanding, pro forma and pro forma as adjusted	78,867	—	—
<b>Stockholders’ (deficit) equity:</b>			
Preferred stock, \$0.001 par value, no shares authorized, issued or outstanding, actual; _____ shares authorized, no shares issued outstanding, pro forma and pro forma as adjusted	—	—	—
Common stock, \$0.001 par value, 113,795,082 shares authorized, 19,021,056 issued and outstanding, actual; 230,000,000 shares authorized, 191,466,396 issued and outstanding, pro forma; _____ shares authorized, _____ shares issued and outstanding, pro forma as adjusted	19	191	
Additional paid-in capital	6,769	215,005	
Accumulated deficit	(85,288)	(95,977)	
Total stockholders’ (deficit) equity	(78,500)	119,219	
<b>Total capitalization</b>	<b>\$ 367</b>	<b>\$ 119,219</b>	<b>\$ _____</b>

(1) A \$1.00 increase (decrease) in the assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as

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adjusted amount of cash and cash equivalents, additional paid-in capital, total stockholders' equity, and total capitalization by approximately \$            million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A 1.0 million share increase (decrease) in the number of shares offered by us would increase (decrease) the pro forma as adjusted amount of cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by approximately \$            million, assuming an initial public offering price of \$            per share, the midpoint of the price range set forth on the cover page of this prospectus, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. This information is illustrative only, and our capitalization following the completion of this offering will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing.

The actual, pro forma, and pro forma as adjusted information set forth in the table excludes:

- 19,046,758 shares of common stock issuable upon the exercise of stock options outstanding as of September 30, 2020, at a weighted average exercise price of \$0.48 per share;
- shares of our common stock that will become available for future issuance under our 2021 Stock Option and Incentive Plan, which will become effective in connection with the completion of this offering; and
- shares of our common stock that will become available for future issuance under our 2021 Employee Stock Purchase Plan, which will become effective in connection with the completion of this offering.



## DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the initial public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock after this offering.

Our historical net tangible book value (deficit) as of September 30, 2020 was \$(78.6) million, or \$(4.13) per share of our common stock. Our historical net tangible book value (deficit) is the amount of our total tangible assets less our total liabilities and preferred stock, which is not included within stockholders' (deficit) equity. Historical net tangible book value (deficit) per share represents our historical net tangible book value (deficit) divided by the 19,021,056 shares of our common stock outstanding as of September 30, 2020.

Our pro forma net tangible book value as of September 30, 2020 was \$119.2 million, or \$0.62 per share of our common stock. Pro forma net tangible book value represents the amount of our total tangible assets less our total liabilities, after giving effect to (i) the acquisition of Amplify, which occurred on October 1, 2020, which includes the issuance of 7,863,094 shares of our Series A-2 preferred stock and 3,048,764 shares of common stock, the recognition of \$10.7 million of expense related to the write-off of acquired in-process research and development assets with no future alternative use, and the recognition of other assets acquired and liabilities assumed, (ii) the issuance of 85,806,214 shares of our Series B preferred stock which occurred on December 21, 2020 for net proceeds of \$116.4 million, and (iii) the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 169,396,576 shares of common stock immediately prior to the completion of this offering. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of shares outstanding as of September 30, 2020, after giving effect to the automatic conversion of all outstanding shares of our preferred stock into common stock immediately prior to the completion of this offering.

After giving further effect to our issuance and sale of \_\_\_\_\_ shares of our common stock in this offering at an assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of September 30, 2020 would have been \$ \_\_\_\_\_ million, or \$ \_\_\_\_\_ per share. This represents an immediate increase in pro forma as adjusted net tangible book value per share of \$ \_\_\_\_\_ to existing stockholders and immediate dilution of \$ \_\_\_\_\_ in pro forma as adjusted net tangible book value per share to new investors purchasing common stock in this offering. Dilution per share to new investors is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the assumed initial public offering price per share paid by new investors. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share	\$
Historical net tangible book value per share as of September 30, 2020	\$(4.13)
Increase in net tangible book value per share attributable to the pro forma adjustments described above	4.75
Pro forma net tangible book value per share as of September 30, 2020, before giving effect to this offering	0.62
Increase in pro forma net tangible book value per share attributable to investors purchasing shares in this offering	_____
Pro forma as adjusted net tangible book value per share immediately after this offering	_____
Dilution in pro forma as adjusted net tangible book value per share to new investors purchasing shares in this offering	\$ _____

A \$1.00 increase (decrease) in the assumed initial public offering price of \$ \_\_\_\_\_ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) our pro forma as adjusted net

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tangible book value by \$            million, our pro forma as adjusted net tangible book value per share after this offering by \$            and dilution per share to new investors purchasing shares in this offering by \$           , assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A 1.0 million share increase in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase the pro forma as adjusted net tangible book value per share after this offering by \$            and decrease the dilution per share to new investors participating in this offering by \$           , assuming no change in the assumed initial public offering price and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A 1.0 million share decrease in the number of shares offered by us, as set forth on the cover page of this prospectus, would decrease the pro forma as adjusted net tangible book value per share after this offering by \$            and increase the dilution per share to new investors participating in this offering by \$           , assuming no change in the assumed initial public offering price and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

If the underwriters exercise their option to purchase additional shares in full, our pro forma as adjusted net tangible book value per share after this offering would be \$            per share, representing an immediate increase in pro forma as adjusted net tangible book value per share of \$            to existing stockholders and immediate dilution in pro forma as adjusted net tangible book value per share of \$            to new investors purchasing common stock in this offering, assuming an initial public offering price of \$            per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. If any shares are issued upon exercise of outstanding options, you will experience further dilution.

The following table summarizes, on the pro forma as adjusted basis described above, the differences between the number of shares of common stock purchased from us, the total consideration paid to us and the average price per share paid by existing stockholders and by new investors purchasing shares of common stock in this offering. The calculation below is based on an assumed initial public offering price of \$            per share, the midpoint of the price range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us:

	Shares Purchased		Total Consideration		Average Price
	Number	Percent	Amount	Percent	Per Share
Existing stockholders	191,466,396	%	\$214,446,765	%	\$ 1.03
New investors					\$
Total		100.0%	\$	100.0%	

A \$1.00 increase (decrease) in the assumed initial public offering price of \$            per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the total consideration paid by new investors by \$            million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by            percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by            percentage points, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same. A 1.0 million share increase (decrease) in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the total consideration paid by new investors by \$            million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by            percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by            percentage points, assuming no change in the assumed initial public offering price.

The table above assumes no exercise of the underwriters' option to purchase additional shares in this offering. If the underwriters' option to purchase additional shares is exercised in full, the number of shares of our common

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stock held by existing stockholders would be reduced to % of the total number of shares of our common stock outstanding after this offering, and the number of shares of common stock held by new investors participating in the offering would be increased to % of the total number of shares of our common stock outstanding after this offering.

The number of shares of our common stock to be outstanding after this offering is based on 191,466,396 shares of our common stock outstanding as of September 30, 2020, which assumes (i) the automatic conversion of all of our outstanding preferred stock into 169,396,576 shares of common stock immediately prior to the completion of this offering, which includes 7,863,094 shares of our Series A-2 preferred stock issued on October 1, 2020 and 85,806,214 shares of our Series B preferred stock issued on December 21, 2020 and (ii) the issuance of 3,048,764 shares of common stock issued on October 1, 2020, and excludes:

- 19,046,758 shares of common stock issuable upon the exercise of stock options outstanding as of September 30, 2020, at a weighted average exercise price of \$0.48 per share;
- shares of our common stock that will become available for future issuance under our 2021 Stock Option and Incentive Plan, or 2021 Plan, which will become effective in connection with the completion of this offering; and
- shares of our common stock that will become available for future issuance under our 2021 Employee Stock Purchase Plan, which will become effective in connection with the completion of this offering.

To the extent that outstanding options are exercised or shares are issued under our 2021 Plan, you will experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities may result in further dilution to our stockholders.

## SELECTED CONSOLIDATED FINANCIAL DATA

You should read the following summary financial data together with our consolidated financial statements and the related notes appearing at the end of this prospectus and the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” section of this prospectus. We have derived the statement of operations data for the years ended December 31, 2018 and 2019 and the balance sheet data as of December 31, 2018 and 2019 from our audited financial statements appearing elsewhere in this prospectus. The statement of operations data for the nine months ended September 30, 2019 and 2020 and the balance sheet data as of September 30, 2020 have been derived from our unaudited financial statements appearing elsewhere in this prospectus and have been prepared on the same basis as the audited financial statements. In the opinion of management, the unaudited data reflect all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of the financial information in those statements. Our historical results are not necessarily indicative of results that should be expected in any future period, and our results for any interim period are not necessarily indicative of results that should be expected for any full year.

	For the Year Ended December 31,		For the Nine Months Ended September 30,	
	2018	2019	2019	2020
(In thousands, except share and per share data)				
<b>Statement of Operations Data:</b>				
Research and development revenue under collaboration agreement	\$ —	\$ 13,753	\$ 10,949	\$ 9,129
Service revenue (related party)	990	—	—	—
Total revenue	990	13,753	10,949	9,129
Operating expenses:				
Research and development	38,986	24,938	18,974	21,445
General and administrative	2,898	7,307	5,024	6,150
Total operating expenses	41,884	32,245	23,998	27,595
Loss from operations	(40,894)	(18,492)	(13,049)	(18,466)
Other income	29	1,675	1,340	261
Net loss and comprehensive loss	<u>\$ (40,865)</u>	<u>\$ (16,817)</u>	<u>\$ (11,709)</u>	<u>\$ (18,205)</u>
Net loss per share attributable to common stockholders, basic and diluted <sup>(1)</sup>	<u>\$ (3.35)</u>	<u>\$ (0.89)</u>	<u>\$ (0.62)</u>	<u>\$ (0.96)</u>
Weighted average shares of common stock outstanding, basic and diluted	<u>12,193,711</u>	<u>18,945,673</u>	<u>18,938,256</u>	<u>19,013,848</u>
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited) <sup>(2)</sup>		\$		\$
Pro forma weighted average shares of common stock outstanding, basic and diluted (unaudited) <sup>(2)</sup>				

(1) See Note 16 and to our consolidated financial statements appearing elsewhere in this prospectus for details on the calculation of basic and diluted net loss per share.

(2) Pro forma basic and diluted net loss per share attributable to common stockholders have been prepared to give effect to the automatic conversion of all shares of preferred stock outstanding into shares of common stock as if the conversion had occurred on the later of the beginning of the period presented or the date the preferred shares were issued.

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	As of December 31,		As of September 30,	
	2018	2019	2019	2020
(in thousands)				
<b>Consolidated Balance Sheet Data:</b>				
Cash and cash equivalents	\$ 18,156	\$ 82,083	\$ 90,260	\$ 55,860
Working capital(1)	16,156	60,908	74,846	31,005
Total assets	20,676	85,974	93,733	60,764
Redeemable convertible preferred stock	62,576	78,867	78,867	78,867
Total stockholders' deficit	(45,840)	(61,463)	(56,714)	(78,500)

(1) We define working capital as current assets less current liabilities.

## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

*You should read the following discussion and analysis of our financial condition and results of operations together with the "Selected Consolidated Financial Data" section of this prospectus and our consolidated financial statements and the related notes included elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus includes forward-looking statements that involve risks and uncertainties, such as statements of our plans, strategies, objectives, expectations and intentions. As a result of many factors, including those factors set forth in the "Risk Factors" section of this prospectus, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.*

### Overview

We are a targeted oncology company focused on developing novel cancer therapies targeting key signaling pathways that drive the formation and spread of cancer. Our programs focus on key cancer driver pathways that are well-validated in scientific literature but lack approved or effective therapies and therefore have the potential to address high unmet medical needs. By leveraging our deep understanding of discovery chemistry, translational science, and patient-centric drug development, we have built a deep pipeline of wholly owned and partnered programs focused on genetically defined or biomarker-driven cancers, which enables us to target specific patient populations that we believe are most likely to respond to treatment with our product candidates. Since we commenced operations in 2016, we have discovered or developed five oncology programs that include four product candidates in either IND-enabling studies or clinical development.

Our lead targeted oncology product candidate, IK-930, is an oral small molecule inhibitor of the transcriptional enhanced associate domain, or TEAD, transcription factor in the Hippo signaling pathway. The Hippo pathway is widely accepted as a key and prevalent driver of cancer pathogenesis and is genetically altered in approximately 10% of all cancers, and such genetic alterations are generally associated with poor clinical outcomes. We intend to pursue clinical development of IK-930 across a wide range of tumor types with known Hippo pathway mutations, and plan to focus our initial development efforts on indications that provide the potential for rapid clinical development to achieve proof-of-concept, such as mesothelioma and soft tissue sarcomas. We intend to submit an Investigational New Drug application, or IND, to the U.S. Food and Drug Administration, or FDA, for IK-930 in the second half of 2021.

For our second targeted oncology program, we have discovered and plan to develop oral small molecule inhibitors of extracellular signal-related kinase 5, or ERK5, a downstream enzyme in the RAS signaling pathway, which have the potential to bring therapeutic benefit to cancer patients with a mutation in the Kirsten rat sarcoma, or KRAS, gene, which is an oncogene implicated in many cancers. We anticipate nominating a development candidate for the ERK5 program and initiating IND-enabling studies in the second half of 2021 with the goal of submitting an IND in the second half of 2022.

In addition to our targeted oncology programs, we have three product candidates designed to modulate the tumor microenvironment in specific patient populations by leveraging biomarker-driven patient enrichment strategies. Two of these product candidates, IK-175 and IK-412, are partnered with Bristol-Myers Squibb Company, or BMS, which we believe validates our ability to rapidly advance internally developed product candidates into clinical development using biomarker-driven patient enrichment strategies.

We were incorporated as a Delaware corporation on March 2, 2016, and our headquarters is located in Boston, Massachusetts. On December 3, 2019, we formally changed our name to Ikena Oncology, previously Kyn Therapeutics. Since our inception, we have devoted substantially all of our efforts to organizing and staffing our company, acquiring intellectual property, business planning, raising capital, conducting discovery, research and development activities, and providing general and administrative support for these operations. We do not

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have any products approved for sale and have not generated any revenue from product sales. To date, we have funded our operations primarily through private placements of preferred stock, payments from a collaboration arrangement and related party revenue. Through September 30, 2020, we have raised an aggregate of approximately \$122.8 million, of which \$95.0 million is related to aggregate upfront consideration related to our master collaboration agreement with BMS, or BMS Collaboration Agreement, which consisted of approximately \$80.5 million in cash and an equity investment of approximately \$14.5 million for which we issued shares of our Series A-1 redeemable convertible preferred stock pursuant to a separate stock purchase agreement, and \$27.8 million of net proceeds from the issuance of redeemable convertible preferred stock to other investors. We also obtained \$11.3 million in cash from our acquisition of Arrys Therapeutics, Inc., or Arrys.

Subsequent to September 30, 2020, we obtained \$3.7 million in cash from our acquisition of Amplify Medicines, Inc., or Amplify, and raised \$116.4 million of net proceeds from the issuance of Series B redeemable convertible preferred stock.

We have incurred significant net losses in every year since our inception and expect to continue to incur significant expenses and increasing net losses for the foreseeable future. Our net losses may fluctuate significantly from quarter to quarter and year to year and could be substantial. Our ability to generate product revenue sufficient to achieve profitability will depend on the successful development and eventual commercialization of one or more of our current or future product candidates. Our net losses were \$40.9 million and \$16.8 million and for the years ended December 31, 2018 and 2019, respectively and \$11.7 million and \$18.2 million for the nine months ended September 30, 2019 and 2020, respectively. As of September 30, 2020, we had an accumulated deficit of \$85.3 million. We anticipate that our expenses will increase significantly as we:

- advance the development of our product candidate pipeline;
- initiate and continue research and preclinical and clinical development of potential new product candidates;
- maintain, expand and protect our intellectual property portfolio;
- acquire or in-license additional product candidates and technologies;
- expand our infrastructure and facilities to accommodate our growing employee base and ongoing development activities;
- establish agreements with contract research organizations, or CROs, and contract manufacturing organizations, or CMOs, in connection with our preclinical studies and clinical trials;
- require the manufacture of larger quantities of our product candidates for clinical development and potential commercialization;
- seek marketing approvals for our product candidates that successfully complete clinical trials, if any;
- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval; and
- add operational, financial and management information systems and personnel, including personnel to support our research and development programs, any future commercialization efforts and our transition to operating as a public company following the completion of this offering.

As a result, we will need substantial additional funding to support our continuing operations and pursue our growth strategy. Until such time as we can generate significant revenue from product sales, if ever, we expect to finance our operations through the sale of equity instruments, debt financings, or other capital sources, which may include collaborations with other companies or other strategic transactions. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on favorable terms, or at all. If we fail to raise capital or enter into such agreements as and when needed, we may have to significantly delay, reduce or eliminate the development and commercialization of one or more of our product candidates.

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We will not generate revenue from product sales unless and until we successfully complete clinical development and obtain marketing approval for our product candidates. The lengthy process of securing marketing approvals for new drugs requires the expenditure of substantial resources. Any delay or failure to obtain regulatory approvals would materially adversely affect the development efforts of our product candidates and our business overall. Because of the numerous risks and uncertainties associated with product development, we are unable to predict the timing or amount of increased expenses or when or if we will be able to achieve or maintain profitability. Even if we are able to generate revenue from product sales, we may not become profitable. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce or terminate our operations.

If we raise additional funds through collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce, or terminate our product development programs or any future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

As of September 30, 2020, we had cash and cash equivalents of \$55.9 million. We believe the existing cash and cash equivalents on hand as of December 31, 2020, together with the anticipated net proceeds from this offering, will enable us to fund our operating expenses and capital expenditure requirements through . We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect. See “—Liquidity and capital resources.”

### **Impact of COVID-19 Pandemic**

In March 2020, the World Health Organization declared the outbreak of COVID-19 a global pandemic, which continues to spread throughout the United States and worldwide. The ultimate extent of the impact of the COVID-19 pandemic on our business, financial condition and results of operations is highly uncertain and will depend on future developments that cannot be predicted, including new information that may emerge concerning the severity of the COVID-19 pandemic and actions taken by government authorities and businesses to contain or prevent the further spread of COVID-19. For instance, a recurrence or continuation of COVID-19 cases could cause a more widespread or severe impact on commercial activity depending on where infection rates are highest. If we or any of the third parties with whom we engage were to experience any shutdowns or other prolonged business disruptions, our ability to conduct our business in the manner and on the timelines presently planned could be materially negatively affected, which could have a material adverse impact on our business, results of operations and financial condition.

We have been carefully monitoring the COVID-19 pandemic and its potential impact on our business and have taken important steps to help ensure the safety of our employees and their families and to reduce the spread of COVID-19. We have established a work-from-home policy for all employees, other than those performing or supporting business-critical operations, such as certain members of our laboratory and facilities staff. For those employees, we have implemented stringent safety measures designed to comply with applicable federal, state and local guidelines instituted in response to the COVID-19 pandemic. We have also maintained efficient communication with our partners and clinical sites as the COVID-19 situation has progressed. We have taken these precautionary steps while maintaining business continuity so that we can continue to progress our programs. While we have experienced some delays in enrollment and site closures at certain of our third-party clinical trial sites, these delays have not had a material impact on our development timelines for our product candidates. We will continue to monitor developments as we address the disruptions and uncertainties relating to the COVID-19 pandemic. See “Risk Factors” for a discussion of the potential adverse impact of the COVID-19 pandemic on our business, financial condition and results of operations.



## **Components of our Results of Operations**

### ***Revenue***

We have not generated any revenue from product sales and do not expect to generate any revenue from the sale of products in the foreseeable future. If our development efforts for our product candidates are successful and result in regulatory approval and successful commercialization efforts, we may generate revenue in the future from product sales. We cannot predict if, when, or to what extent we will generate revenue from the commercialization and sale of our product candidates. We may never succeed in obtaining regulatory approval for any of our product candidates.

All of our revenue has been derived from research and development revenue under our BMS Collaboration Agreement and service revenue related to our service agreements with related parties.

### ***Collaboration Agreement and Stock Purchase Agreement with BMS***

In January 2019, we entered into the BMS Collaboration Agreement with Celgene Corporation (which was acquired by BMS in November 2019), pursuant to which BMS may elect in its sole discretion to exclusively license rights to develop and commercialize compounds (and products and diagnostic products containing such compounds) that modulate the activity of two collaboration targets, kynurenine and aryl hydrocarbon receptor, or AHR, excluding AHR agonists for inverse agonists, which we are developing as IK-175 and IK-412, respectively. On a program-by-program basis, through the completion of a Phase 1b clinical trial for each of IK-175 and IK-412, BMS has the exclusive license to develop, commercialize and manufacture the relevant product candidate worldwide. Concurrent with execution of the BMS Collaboration Agreement, we entered into a stock purchase agreement with Celgene Corporation (now BMS) in November 2019, or the Stock Purchase Agreement, pursuant to which we issued Celgene Corporation 14,545,450 shares of Series A-1 preferred stock.

BMS paid a total of \$95.0 million in aggregate upfront consideration related to the BMS Collaboration Agreement and Stock Purchase Agreement. We are eligible to receive \$50.0 million, in case of an exercise of its option with respect to IK-175, and \$40.0 million, in case of an exercise of its option with respect to IK-412. If we do not complete a Phase 1b clinical trial by the end of the research term, we may elect to provide a data package to BMS upon which BMS may exercise the foregoing option for an additional \$0.25 million fee. Upon the exercise of the delivery of each license, we become eligible to receive up to \$265.0 million in regulatory milestones and \$185.0 million in commercial milestones as well as a tiered royalties at rates ranging from the high single to low double digit percentages based on worldwide annual net sales by BMS, subject to specified gross sale reductions.

### ***Operating Expenses***

Our operating expenses since inception have consisted solely of research and development costs and general and administrative costs.

#### ***Research and Development Expenses***

Research and development expenses consist primarily of costs incurred for our research and development activities. These efforts and costs include external research costs, personnel costs, consultants, supplies, license fees and facility-related expenses. We expense research and development costs as incurred. These expenses include:

- employee-related expenses, including salaries, related benefits and stock-based compensation expense, for employees engaged in research and development functions;
- expenses incurred under agreements with CROs which are primarily engaged to support our clinical trials;

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- expenses incurred under agreements with CMOs, which are primarily engaged to provide drug substance and product for our preclinical research and development programs, nonclinical studies and other scientific development services;
- the cost of acquiring and manufacturing preclinical study materials, including manufacturing registration and validation batches;
- facilities, depreciation and other expenses, which include direct and allocated expenses for rent and maintenance of facilities and insurance;
- acquisition of in-process research and development assets that have no alternative future use;
- costs related to compliance with quality and regulatory requirements; and
- payments made under third-party licensing agreements.

Advance payments that we make for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses. Such amounts are recognized as an expense as the goods are delivered or the related services are performed, or until it is no longer expected that the goods will be delivered or the services rendered.

Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect that our research and development expenses will increase substantially in connection with our planned clinical development activities in the near term and in the future. At this time, we cannot accurately estimate or know the nature, timing and costs of the efforts that will be necessary to complete the clinical development of, or obtain regulatory approval for, any of our current or future product candidates. This is due to the numerous risks and uncertainties associated with product development and commercialization, including the following:

- our ability to add and retain key research and development personnel;
- our ability to successfully develop, obtain regulatory approval for, and then successfully commercialize our product candidates;
- our successful enrollment in and completion of clinical trials, including our ability to generate positive data from any such trials;
- the size and cost of any future clinical trials for existing or future product candidates in our pipeline;
- the costs associated with the development of any additional programs we identify in-house or acquire through collaborations and other arrangements and the success of such collaborations;
- the terms and timing of any additional collaborations, license or other arrangement, including the timing of any payments thereunder;
- our ability to establish and maintain agreements and operate with third-party manufacturers for clinical supply for our clinical trials and commercial manufacturing, if any of our product candidates are approved;
- costs related to manufacturing of our product candidates or to account for any future changes in our manufacturing plans;
- our ability to obtain and maintain patents, trade secret and other intellectual property protection and regulatory exclusivity for our product candidates, both in the United States and internationally;
- our ability to obtain and maintain third-party insurance coverage and adequate reimbursement for our product candidates, if and when approved;
- the acceptance of our product candidates, if approved, by patients, the medical community and third-party payors;

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- effectively competing with other products if our product candidates are approved;
- the impact of any business interruptions to our operations, including the timing and enrollment of patients in our planned clinical trials, or to those of our manufacturers, suppliers, or other vendors resulting from the COVID-19 pandemic or similar public health crisis; and
- our ability to maintain a continued acceptable safety profile for our therapies following approval.

A change in the outcome of any of these variables with respect to the development of our product candidates could significantly change the costs and timing associated with the development of that product candidate. We may never succeed in obtaining regulatory approval for any of our product candidates.

### *General and Administrative Expenses*

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, for personnel in executive, finance and administrative functions. General and administrative expenses also include direct and allocated facility-related costs as well as professional fees for legal, patent, consulting, investor and public relations, accounting, auditing, tax services and insurance costs.

We expect that our general and administrative expenses will increase as our organization and headcount needed in the future to support continued research and development activities and potential commercialization of our product candidates. These increases will likely include increased costs related to the hiring of additional personnel and fees to outside consultants, attorneys and accountants, among other expenses. Additionally, we expect to incur increased expenses associated with being a public company, including costs of additional personnel, accounting, audit, legal, regulatory and tax-related services associated with maintaining compliance with exchange listing and Securities and Exchange Commission, or SEC, requirements, director and officer insurance costs, and investor and public relations costs.

### *Results of Operations*

#### *Comparison of the Years Ended December 31, 2018 and 2019*

The following table summarizes our results of operations for the years ended December 31, 2018 and 2019:

	<u>Year Ended December 31,</u>		<u>Change</u>
	<u>2018</u>	<u>2019</u>	
	<u>(in thousands)</u>		
Revenue:			
Research and development revenue under collaboration agreement	\$ —	\$ 13,753	\$ 13,753
Service revenue (related party)	990	—	(990)
Total revenue	990	13,753	12,763
Operating expenses:			
Research and development	38,986	24,938	(14,048)
General and administrative	2,898	7,307	4,409
Total operating expenses	41,884	32,245	(9,639)
Loss from operations	(40,894)	(18,492)	22,402
Other income	29	1,675	1,646
Net loss	<u>\$ (40,865)</u>	<u>\$ (16,817)</u>	<u>\$ 24,048</u>

### *Revenue*

Related party revenue of \$1.0 million for the year ended December 31, 2018 was related to services performed on behalf of related entities. We had no related party revenue for the year ended December 31, 2019.

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We had no research and development revenue under collaboration agreement in the year ended December 31, 2018. The research and development revenue under collaboration agreement of \$13.8 million for the year ended December 31, 2019 related to the BMS Collaboration Agreement for the IK-175 and IK-412 programs which was executed in January 2019.

### *Research and Development Expenses*

The following table summarizes our general and administrative expenses for each period presented:

	<u>Year Ended December 31,</u>		<u>Change</u>
	<u>2018</u>	<u>2019</u>	
	<u>(in thousands)</u>		
Direct research and development expenses by program:			
IK-930	\$ —	\$ 1,276	\$ 1,276
IK-175	4,204	5,449	1,245
IK-412	3,328	4,371	1,043
IK-007	265	5,275	5,010
Other discovery stage programs	—	1,513	1,513
Acquisition of in-process research and development assets	28,463	—	(28,463)
Research and development personnel and overhead expenses	2,726	7,054	4,328
<b>Total research and development expenses</b>	<b>\$ 38,986</b>	<b>\$ 24,938</b>	<b>\$(14,048)</b>

Research and development expense was \$39.0 million for the year ended December 31, 2018, compared to \$24.9 million for the year ended December 31, 2019. Included within research and development personnel and overhead expenses is stock-based compensation expense of \$0.1 million and \$0.5 million for the years ended December 31, 2018 and 2019, respectively. The decrease in research and development expense was primarily attributable to expense recognized during 2018 related to the acquisition of in process research and development assets of \$28.5 million as a result of the acquisition of Arrys in December 2018. Excluding the expense associated the acquisition of in-process research and development, research and development expenses increased by \$14.4 million. This was primarily due to initiation of clinical activities for IK-007, completion of IND-enabling studies and manufacturing development costs for IK-175, preclinical and manufacturing development costs for IK-412, discovery and preclinical activities for IK-930 and research activities for other discovery stage programs. In addition, research and development expenses related to personnel and overhead expenses increased due to an increase in headcount.

### *General and Administrative Expenses*

General and administrative expense was \$2.9 million for the year ended December 31, 2018, as compared to \$7.3 million for the year ended December 31, 2019. General and administrative expense includes \$0.2 million and \$0.7 million of stock-based compensation expense for the years ended December 31, 2018 and 2019, respectively. The increase was primarily attributable to an increase in compensation expense due to an increase in headcount, as well as general increases in legal and consulting expenses.

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### *Comparison of the Nine Months Ended September 30, 2019 and 2020*

The following table summarizes our results of operations for the nine months ended September 30, 2019 and September 30, 2020:

	Nine Months Ended September 30,		Change
	2019	2020	
(in thousands)			
Revenue:			
Research and development revenue under collaboration agreement	\$ 10,949	\$ 9,129	\$ (1,820)
Total revenue	10,949	9,129	(1,820)
Operating expenses:			
Research and development	18,974	21,445	2,471
General and administrative	5,024	6,150	1,126
Total operating expenses	23,998	27,595	3,597
Loss from operations	(13,049)	(18,466)	(5,417)
Other income	1,340	261	(1,079)
Net loss	\$ (11,709)	\$ (18,205)	\$ (6,496)

#### *Revenue*

Research and development revenue under collaboration agreement was \$10.9 million for the nine months ended September 30, 2019, compared to \$9.1 million for the nine months ended September 30, 2020. This decrease was primarily attributable to a decrease in the amount of activities related to our IK-412 program under the BMS Collaboration Agreement due to timing of drug substance availability and partially offset by an increase in the amount of activities related to the IK-175 program. The BMS Collaboration Agreement commenced in the nine months ended September 30, 2019 and program setup costs were incurred in this period.

#### *Research and Development Expenses*

The following table summarizes our research and development expenses for each period presented:

	Nine Months Ended September 30,		Change
	2019	2020	
(in thousands)			
Direct research and development expenses by program:			
IK-930	\$ 607	\$ 3,024	\$ 2,417
IK-175	4,382	4,963	581
IK-412	3,562	706	(2,856)
IK-007	4,304	4,353	49
Other discovery stage programs	908	1,953	1,045
Research and development personnel and overhead expenses	5,211	6,446	1,235
Total research and development expenses	\$ 18,974	\$ 21,445	\$ 2,471

Research and development expense was \$19.0 million for the nine months ended September 30, 2019, as compared to \$21.4 million for the nine months ended September 30, 2020. Included within research and development personnel and overhead expenses is stock-based compensation expense of \$0.3 million and \$0.5 million for the nine months ended September 30, 2019 and 2020, respectively. The increase in research and development expense was primarily attributable to the initiation of clinical activities for IK-175, completion of studies to support drug candidate and initiation of IND-enabling studies for IK-930 and expenses related to

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research activities for other discovery stage programs. In addition, research and development personnel and overhead expenses increased due to an increase in headcount. This increase was offset by a decrease attributable to timing of drug substance availability for IK-412.

### *General and Administrative Expenses*

General and administrative expense was \$5.0 million for the nine months ended September 30, 2019 as compared to \$6.2 million for the nine months ended September 30, 2020. General and administrative expense includes \$0.5 million and \$0.6 million of stock-based compensation expense for the nine months ended September 30, 2019 and 2020, respectively. The increase in general and administrative expenses was primarily attributable to an increase in compensation expenses due to an increase in headcount.

## **Liquidity and Capital Resources**

### *Sources of Liquidity*

Since our inception, we have not generated any revenue from product sales and have incurred significant operating losses. We have not yet commercialized any products and we do not expect to generate revenue from sales of any product candidates for several years, if ever. To date, we have financed our operations primarily through private placements of preferred stock and from upfront payments from the BMS Collaboration Agreement. Through September 30, 2020, we have raised an aggregate of \$122.8 million, of which \$95.0 million related to aggregate upfront consideration related to the BMS Collaboration Agreement, which consisted of approximately \$80.5 million in cash and an equity investment of approximately \$14.5 million for which we issued shares of our Series A-1 redeemable convertible preferred stock pursuant to a separate stock purchase agreement, and \$27.8 million of net proceeds from the issuance of redeemable convertible preferred stock to other investors. We also obtained \$11.3 million in cash from our acquisition of Arrys. Subsequent to September 30, 2020, we obtained \$3.7 million in cash from our acquisition of Amplify and raised \$116.4 million of net proceeds from the issuance of Series B redeemable convertible preferred stock. As of September 30, 2020, we had cash and cash equivalents of \$55.9 million.

### *Cash Flows*

The following table summarizes our sources and uses of cash for the years ended December 31, 2019 and 2018, and nine months ended September 30, 2019 and 2020:

	Year Ended December 31,		Nine Months Ended September 30,	
	2018	2019	2019	2020
	(in thousands)			
Net cash (used in) provided by operating activities	\$(11,608)	\$47,927	\$55,968	\$(25,256)
Net cash provided by (used in) investing activities	10,969	(316)	(179)	(116)
Net cash provided by financing activities	—	16,316	16,316	21
Net increase (decrease) in cash and cash equivalents	<u>\$ (639)</u>	<u>\$63,927</u>	<u>\$72,105</u>	<u>\$(25,351)</u>

### *Operating Activities*

During the year ended December 31, 2018, we used \$11.6 million of cash in operating activities primarily resulting from cash utilized to fund our net loss of \$40.9 million. The net loss included \$28.5 million of non-cash research and development expense for the write-off of acquired in-process research and development and \$0.7 million of other non-cash expenses. Operating assets and liabilities changed by \$0.1 million.

During the year ended December 31, 2019, operating activities provided \$47.9 million primarily related to \$78.7 million of upfront consideration from the BMS Collaboration Agreement, of which \$13.8 million was

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recognized during the period and \$65.0 million was deferred as of December 31, 2019. We utilized cash to fund our net loss of \$16.8 million, which includes the \$13.8 million of revenue recognized as a result of the BMS Collaboration Agreement and \$1.3 million of other non-cash expense. In addition, there was a net use of \$1.5 million to fund changes in prepaid expenses, other current assets, accounts payable, accrued expenses and other current liabilities.

During the nine months ended September 30, 2019, operating activities provided \$56.0 million primarily related to \$78.7 million of upfront consideration related to the BMS Collaboration Agreement, of which \$10.9 million was recognized during the period and \$67.8 million was deferred as of September 30, 2019. We utilized cash to fund our net loss of \$11.7 million, which includes the \$10.9 million of revenue recognized as a result of the BMS Collaboration Agreement and \$0.9 million in other non-cash expense. In addition, there was a net use of \$1.0 million to fund changes in prepaid expense and other current assets.

During the nine months ended September 30, 2020, we used \$25.3 million in operating activities which primarily related to cash utilized to fund our net loss of \$18.2 million, which includes \$9.1 million of non-cash revenue recognition and \$2.1 million in non-cash expense.

### *Investing Activities*

During the year ended December 31, 2018 net cash provided by investing activities was \$11.0 million due to \$11.3 million of cash obtained in the acquisition of Arrys, and partially offset by \$0.3 million of cash used in purchases of property and equipment.

During the year ended December 31, 2019 we used \$0.3 million of cash in investing activities related to purchases of property and equipment.

During the nine months ended September 30, 2019 we used \$0.2 million of cash in investing activities which was related to purchases of property and equipment.

During the nine months ended September 30, 2020 we used \$0.1 million of cash in investing activities which was related to purchases of property and equipment.

### *Financing Activities*

During the year ended December 31, 2018 there was no net cash provided in or used by financing activities.

During the year ended December 31, 2019 net cash provided by financing activities was \$16.3 million which related to the proceeds of issuance of preferred stock.

During the nine months ended September 30, 2019 net cash provided by financing activities was \$16.3 million which related to the proceeds of issuance of preferred stock.

During the nine months ended September 30, 2020 there was minimal net cash provided by financing activities related to the proceeds from exercises of stock options.

### *Funding Requirements*

We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the research and development for, initiate clinical trials for, and seek marketing approval for, our product candidates. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. Furthermore, upon the closing of this offering, we expect to incur additional costs associated with operating as a

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public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate our research and development programs or future commercialization efforts.

We expect that the net proceeds from this offering, together with our existing cash and cash equivalents as of December 31, 2020, will enable us to fund our operating expenses and capital expenditure requirements through . We have based this estimate on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Our future capital requirements will depend on many factors, including:

- the scope, progress, results and costs of discovery, preclinical development, laboratory testing and clinical trials for other potential product candidates we may develop, if any;
- the costs, timing and outcome of regulatory review of our product candidates;
- our ability to establish and maintain collaborations on favorable terms, if at all;
- the achievement of milestones or occurrence of other developments that trigger payments under any collaboration agreements we might have at such time;
- the costs and timing of future commercialization activities, including product sales, marketing, manufacturing and distribution, for any of our product candidates for which we receive marketing approval;
- the amount of revenue, if any, received from commercial sales of our product candidates, should any of our product candidates receive marketing approval;
- the costs of preparing, filing and prosecuting patent applications, obtaining, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- the in-licensing or acquisition of assets in line with our strategy;
- our headcount growth and associated costs as we expand our business operations and our research and development activities; and
- the costs of operating as a public company.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. We do not have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interests may be diluted, and the terms of these securities may include liquidation or other preferences that could adversely affect your rights as a common stockholder. Any debt financing, if available, may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact our ability to conduct our business.

If we raise funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.



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### Contractual Obligations

The following table summarizes our significant contractual obligations as of payment due date by period at December 31, 2019:

	Payments Due by Period				
	(in thousands)				
	Total	Less than 1 year	1 to 3 years	3 to 5 years	More than 5 years
Operating lease obligation <sup>(1)</sup>	\$1,118	\$ 1,118	\$ —	\$ —	\$ —
Total	\$1,118	\$ 1,118	\$ —	\$ —	\$ —

(1) Represents future minimum lease payments under our non-cancelable operating lease which expires in February 2021. The minimum lease payments above do not include any related common area maintenance charges, operating expenses or real estate taxes.

On July 21, 2020, we entered into an operating lease agreement for 20,752 square feet of office, lab and animal care facility space located in Boston, Massachusetts for our new corporate headquarters. The commencement date of the lease is estimated to be February 1, 2021 and the lease term is 63 months. The lease provides a three-month free rent period, which will commence on the lease commencement date. The base rent is \$145 thousand a month and escalates by 3% annually.

We enter into contracts in the normal course of business with CROs and CMOs for clinical trials, preclinical research studies and testing, manufacturing and other services and products for operating purposes. These contracts do not contain any minimum purchase commitments and are cancelable by us upon prior notice of 30 days and, as a result, are not included in the table of contractual obligations above. Payments due upon cancellation consist only of payments for services provided and expenses incurred up to the date of cancellation.

We may incur potential contingent payments upon our achievement of clinical, regulatory and commercial milestones, as applicable, or that we may be required to make royalty payments under license agreements we have entered into with various entities pursuant to which we have in-licensed certain intellectual property such as our patent license agreement with the University of Texas at Austin and our license agreement with AskAt, Inc. Due to the uncertainty of the achievement and timing of the events requiring payment under these agreements, the amounts to be paid by us are not fixed or determinable at this time and have not been included in the table above.

### Critical Accounting Policies and Use of Estimates

Our management's discussion and analysis of financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States, or GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities and expenses and the disclosure of contingent assets and liabilities in our consolidated financial statements during the reporting periods. These items are monitored and analyzed by us for changes in facts and circumstances, and material changes in these estimates could occur in the future. We base our estimates on historical experience, known trends and events, and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Changes in estimates are reflected in reported results for the period in which they become known. Actual results may differ materially from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in the notes to our consolidated financial statements appearing elsewhere in this prospectus, we believe the following accounting policies used in the preparation of our consolidated financial statements require the most significant judgments and estimates.

### **Revenue Recognition**

As discussed in Note 2 to our consolidated audited financial statements appearing at the end of this prospectus, we adopted Accounting Standards Codification (ASC) 606, *Revenue from Contracts with Customers* (“ASC 606”) as of January 1, 2018. Under ASC 606, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services.

To determine revenue recognition for arrangements that are within the scope of ASC 606, we perform the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) we satisfy a performance obligation. At contract inception, once the contract is determined to be within the scope of Topic 606, we assess the goods or services promised within each contract and determine those that are performance obligations, then assess whether each promised good or service is distinct. When we offer options for additional goods or services, such as to receive a license for intellectual property or for additional goods or services, we evaluate whether such options contain material rights that should be treated as additional performance obligations. Once performance obligations are identified, we then recognize as revenue the amount of the transaction price that the Company allocated to the respective performance obligation when (or as) each performance obligation is satisfied, either at a point in time or over time. If the performance obligation is satisfied over time, we recognize revenue based on the use of an input method.

At each reporting date, we calculate the measure of progress for the performance obligations transferred over time. The calculation generally uses an input measure based on costs incurred to-date relative to estimated total costs to complete the transfer of the performance obligation. The measurement of progress is then used to calculate the total revenue earned, including any cumulative catch-up adjustment.

We have two performance obligations in the BMS Collaboration Agreement, which are research and development services for IK-412 and for IK-175. We recognize revenue related to each of its performance obligations as the research and development services are performed. We recognize revenue related to research and development services performed using an input method by calculating costs incurred at each period end relative to total costs expected to be incurred.

### **Accrued Research and Development Expenses**

As part of the process of preparing our consolidated financial statements, we are required to estimate our accrued research and development expenses. This process involves reviewing open contracts and purchase orders, communicating with our applicable personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of actual costs. The majority of our service providers invoice us in arrears for services performed, on a pre-determined schedule or when contractual milestones are met; however, some require advance payments. We make estimates of our accrued expenses as of each balance sheet date in the consolidated financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of these estimates with the service providers and make adjustments, if necessary. Examples of estimated accrued research and development expenses include fees paid to:

- vendors, including research laboratories, in connection with preclinical development activities;
- CROs and investigative sites in connection with preclinical studies; and
- CMOs in connection with drug substance and drug product formulation of preclinical studies.

We base the expense recorded related to external research and development on our estimates of the services received and efforts expended pursuant to quotes and contracts with multiple CMOs and CROs that supply,

conduct and manage nonclinical studies on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the expense. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from the estimate, we adjust the accrual or the amount of prepaid expenses accordingly. Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in reporting amounts that are too high or too low in any particular period. To date, there have not been any material adjustments to our prior estimates of accrued research and development expenses.

### ***Stock-Based Compensation***

We apply the fair value recognition provisions of ASC 718, *Compensation—Stock Compensation*, or ASC 718, for stock-based awards granted to employees and directors for their services on the board of directors. Determining the amount of stock-based compensation to be recorded requires us to develop estimates of the fair value of stock options as of their grant date. We estimate the fair value of each stock option grant using the Black-Scholes option-pricing model. Calculating the fair value of stock-based awards requires that we make subjective assumptions.

Pursuant to ASC 718, we measure stock-based awards granted to employees and members of the board of directors at fair value on the date of grant and recognize the corresponding stock-based compensation expense of those awards on a straight-line basis over the requisite service period, which is generally the vesting period of the respective award. We have historically granted stock options with exercise prices equivalent to the fair value of our common stock as of the date of grant.

The Black-Scholes option-pricing model uses the following inputs: the fair value of our common stock, the expected volatility of our common stock, the expected term of our stock options, the risk-free interest rate for a period that approximates the expected term of our stock options and our expected dividend yield. Due to the lack of a public market for our common stock and a lack of company-specific historical and implied volatility data, we have based our computation of expected volatility on the historical volatility of a representative group of public companies with similar characteristics to us, including stage of product development, life science industry focus, length of trading history and similar vesting provisions. The historical volatility data is calculated based on a period of time commensurate with the expected term assumption. We will continue to apply this process until a sufficient amount of historical information regarding the volatility of our own stock price becomes available or until circumstances change, such that the identified entities are no longer representative companies. In the latter case, more suitable, similar entities whose share prices are publicly available would be utilized in the calculation. We use the simplified method as prescribed by the SEC Staff Accounting Bulletin No. 107, *Share-Based Payment*, to calculate the expected term for options granted to employees as we do not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term. Under this approach, the weighted-average expected option term is presumed to be the average of the contractual term (ten years) and the vesting term (generally four years) of our stock options. We utilize this method due to lack of historical exercise data and the “plain-vanilla” nature of our stock-based awards. The expected term is applied to the stock option grant group as a whole, as we do not expect substantially different exercise or post-vesting termination behavior among our employee population. For options granted to non-employees, we utilize the contractual term of the arrangement as the basis for the expected term assumption. The risk-free interest rate is based on a treasury instrument whose term is consistent with the expected term of the stock options. The expected dividend yield is assumed to be zero as we have never paid cash dividends and have no current plans to pay any cash dividends on our common stock. The fair value of each restricted common stock award is estimated on the date of grant based on the fair value of our common stock on that same date.

*Determination of Fair Value of Common Stock*

As there has been no public market for our common stock to date, the estimated fair value of our common stock has been determined by our board of directors as of the date of each option grant with input from management, considering our most recently available third-party valuations of common stock, and our board of directors' assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent valuation through the date of the grant. These third-party valuations were performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, Valuation of Privately-Held-Company Equity Securities Issued as Compensation.

Under the probability-weighted expected return method, or PWERM, the value of an enterprise, and its underlying common securities, are estimated based on an analysis of future values for the enterprise, assuming various outcomes. The value of the common securities is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes and the rights of each class of equity. The future values of the common securities under the various outcomes are discounted back to the valuation date at an appropriate risk-adjusted discount rate and then probability weighted to determine the value for the common securities.

The option pricing method, or OPM, treats common securities and preferred securities as call options on the enterprise's equity value, with exercise prices based on the liquidation preferences of the preferred securities. Under this method, the common securities have value only if the funds available for distribution to shareholders exceed the value of the liquidation preferences at the time of a liquidity event. The Black-Scholes model is used to price the call option, and the model includes assumptions for the time to liquidity and the volatility of equity value.

The hybrid method is a hybrid between the PWERM and OPM, estimating the probability-weighted value across multiple scenarios but using the OPM to estimate the allocation of value within one or more of those scenarios.

Valuations performed in the year ended December 31, 2018 and 2019 and the nine months ended September 30, 2019 used the OPM, and the nine months ended September 30, 2020 used a hybrid of the PWERM and OPM when allocating our enterprise value to classes of securities.

When using the hybrid method, we assumed two scenarios: an IPO scenario and a remain private scenario. Both scenarios estimated an equity value based on the guideline public company method under the market approach. The guideline public companies considered for these scenarios consist of biopharmaceutical companies with recently completed initial public offerings. The IPO scenario assumed the conversion of our preferred shares to common stock. In the remain-private scenario, value was allocated using the OPM.

In the OPM, volatility is estimated based on the trading histories of selected guideline public companies. The relative probability of each scenario was determined based on an assessment of then-current market conditions and our expectations as to timing and prospects of an IPO.

The assumptions underlying these valuations were highly complex and subjective and represented management's best estimates, which involved inherent uncertainties and the application of management's judgment. As a result, if we had used significantly different assumptions or estimates, the fair value of our common stock and our stock-based compensation expense could be materially different.

Once a public trading market for our common stock has been established in connection with the completion of this offering, it will no longer be necessary for our board of directors to estimate the fair value of our common stock in connection with our accounting for granted stock options and other such awards we may grant, as the fair value of our common stock will be determined based on the quoted market price of our common stock.

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### *Awards granted*

The following table summarizes each equity award grant between January 1, 2018 through September 30, 2020:

<b>Grant Date</b>	<b>Type of Award</b>	<b>Number of Common Shares</b>	<b>Exercise Price of Award per Share</b>	<b>Fair Value of Common Stock per Share on Grant Date</b>	<b>Per Share Estimated Fair Value of Award</b>
January 24, 2018	Option	1,403,181	\$ 0.41	\$ 0.41	\$ 0.26
February 15, 2018	Option	90,909	\$ 0.41	\$ 0.41	\$ 0.26
February 20, 2018	Option	1,136,363	\$ 0.41	\$ 0.41	\$ 0.26
May 10, 2018	Option	386,364	\$ 0.41	\$ 0.41	\$ 0.26
August 9, 2018	Option	318,181	\$ 0.41	\$ 0.41	\$ 0.26
December 18, 2018	Option	2,862,940	\$ 0.30	\$ 0.30	\$ 0.61
March 20, 2019	Option	6,633,540	\$ 0.58	\$ 0.58	\$ 0.36
May 16, 2019	Option	1,898,181	\$ 0.58	\$ 0.58	\$ 0.37
July 11, 2019	Option	875,584	\$ 0.58	\$ 0.58	\$ 0.35
October 18, 2019	Option	1,338,858	\$ 0.58	\$ 0.58	\$ 0.35
December 6, 2019	Option	654,633	\$ 0.63	\$ 0.63	\$ 0.38
May 6, 2020	Option	440,024	\$ 0.63	\$ 0.63	\$ 0.41
July 23, 2020	Option	1,388,269	\$ 0.63	\$ 0.77	\$ 0.52

At the time of grant of each of the stock options listed above, our board of directors determined that the values included under “Per share exercise price of awards” reasonably reflected the per share fair value of our common shares as of the grant dates. However, for certain dates, the fair value of the common shares at the date of these grants was adjusted to the amounts included under “Fair Value of Common Stock per Share on Grant Date” in connection with retrospective fair value assessments for financial reporting purposes. These reassessed values were based, in part, upon third-party valuations of our common stock prepared as of each grant date on a retrospective basis. The third-party valuations were prepared using the hybrid method and used market approaches to determine our enterprise value.

### **Off-Balance Sheet Arrangements**

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under applicable SEC rules.

### **Quantitative and Qualitative Disclosures About Market Risk**

We are exposed to market risk related to changes in interest rates. As of December 31, 2018 and 2019, our cash equivalents consisted of interest-bearing checking accounts. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates. Due to the short-term nature and the low risk profile of our interest-bearing accounts, an immediate 10% change in interest rates would not have a material effect on the fair market value of our cash and cash equivalents or on our financial position or results of operations.

We are not currently exposed to significant market risk related to changes in foreign currency exchange rates.

Inflation generally affects us by increasing our costs. We do not believe that inflation had a material effect on our business, financial condition or results of operations during the years ended December 31, 2018 and 2019, and the nine months ended September 30, 2019 and 2020.

### **Emerging Growth Company**

In April 2012, the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, was enacted. Section 107 of the JOBS Act provides that an “emerging growth company,” or an EGC, can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as amended, or the Securities Act, for complying with new or revised accounting standards. Thus, an EGC can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period for new or revised accounting standards during the period in which we remain an emerging growth company; however, we may adopt certain new or revised accounting standards early.

We will remain an emerging growth company until the earliest to occur of: (1) the last day of the fiscal year in which we have more than \$1.07 billion in annual revenue; (2) the date we qualify as a “large accelerated filer,” with at least \$700.0 million of equity securities held by non-affiliates; (3) the date on which we have issued more than \$1.0 billion in non-convertible debt securities during the prior three-year period; and (4) the last day of the fiscal year ending after the fifth anniversary of our initial public offering.

## BUSINESS

### Overview

We are a targeted oncology company focused on developing novel cancer therapies targeting key signaling pathways that drive the formation and spread of cancer. Our programs focus on key cancer driver pathways that are well-validated in scientific literature but lack approved or effective therapies and therefore have the potential to address high unmet medical needs. By leveraging our deep understanding of discovery chemistry, translational science, and patient-centric drug development, we have built a deep pipeline of wholly owned and partnered programs focused on genetically defined or biomarker-driven cancers, which enables us to target specific patient populations that we believe are most likely to respond to treatment with our product candidates. Since we commenced operations in 2016, we have discovered or developed five oncology programs that include four product candidates in either IND-enabling studies or clinical development.

Our lead targeted oncology product candidate, IK-930, is an oral small molecule inhibitor of the transcriptional enhanced associate domain, or TEAD, transcription factor in the Hippo signaling pathway. The Hippo pathway is widely accepted as a key and prevalent driver of cancer pathogenesis and is genetically altered in approximately 10% of all cancers, and such genetic alterations are generally associated with poor clinical outcomes. We intend to pursue clinical development of IK-930 across a wide range of tumor types with known Hippo pathway mutations, and plan to focus our initial development efforts on indications that provide the potential for rapid clinical development to achieve proof-of-concept, such as mesothelioma and soft tissue sarcomas. We intend to submit an Investigational New Drug application, or IND, to the U.S. Food and Drug Administration, or FDA, for IK-930 in the second half of 2021.

For our second targeted oncology program, we have discovered and plan to develop oral small molecule inhibitors of extracellular signal-related kinase 5, or ERK5, a downstream enzyme in the RAS signaling pathway, which have the potential to bring therapeutic benefit to cancer patients with a mutation in the Kirsten rat sarcoma, or KRAS, gene, which is an oncogene implicated in many cancers. We anticipate nominating a development candidate for the ERK5 program and initiating IND-enabling studies in the second half of 2021 with the goal of submitting an IND in the second half of 2022.





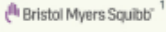

In addition to the programs described above, we have ongoing discovery programs in targeted oncology focused on the development of novel drug candidates that target key nodes within the RAS pathway, and expect to nominate the first development candidate resulting from these discovery programs in 2022.

In addition to our targeted oncology programs, we have three product candidates designed to modulate the tumor microenvironment in specific patient populations by leveraging biomarker-driven patient enrichment strategies. Two of these product candidates, IK-175 and IK-412, are partnered with Bristol-Myers Squibb Company, or BMS, which we believe validates our ability to rapidly advance internally developed product candidates into clinical development using biomarker-driven patient enrichment strategies. The programs are as follows:

- IK-175 is an oral inhibitor of aryl hydrocarbon receptor, or AHR. We are currently enrolling patients with bladder cancer with activated AHR in a dose expansion cohort of a Phase 1 clinical trial of IK-175 as a monotherapy. Additionally, we plan on assessing IK-175 in combination with nivolumab in patients with bladder cancer in the first half of 2021 in the Phase 1b portion of the clinical trial. We expect to complete enrollment in both treatment arms in the second half of 2022.
- IK-412 is an enzyme therapy designed to lower levels of immunosuppressive kynurenine in the tumor microenvironment. We are currently conducting IND-enabling studies of IK-412 and intend to submit an IND in the second half of 2021.
- Finally, we are evaluating IK-007, an oral antagonist of prostaglandin E2 receptor 4, or EP4, in a Phase 1b clinical trial in biomarker-enriched patients with microsatellite stable colorectal cancer, or MSS CRC, who express high levels of an EP4 pathway metabolite called PGE2 Metabolite, or PGEM. We expect to complete enrollment for the Phase 1b clinical trial in the second half of 2021.

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Our current pipeline of discovery and clinical programs is shown below:

Program	Target	Lead Indication(s)	Stage	Next Milestone(s)	Product Rights
<b>Targeted Oncology Programs</b>					
IK-930	TEAD	Hippo-mutated cancers	IND-enabling	2H 2021: Submit IND	
RAS Signaling	ERK5	KRAS-mutated cancers	Lead Optimization	2H 2021: Initiate IND-enabling studies 2H 2022: Submit IND	
RAS Pathway	Multiple	Solid Tumors	Discovery	2022: Nominate Development Candidate	
<b>Tumor Microenvironment Programs</b>					
IK-175	AHR	Biomarker enriched bladder cancer	Phase 1a (single agent)	1H 2021: Initiate Phase 1b combination arm 2H 2022: Complete Phase 1 enrollment	 <sup>1</sup>
IK-412	Kynurenine	Solid Tumors	IND-enabling	2H 2021: Submit IND	 <sup>1</sup>
IK-007 +pembro <sup>2</sup>	EP4	Biomarker enriched MSS CRC	Phase 1b	2H 2021: Complete Phase 1b enrollment	 <sup>3</sup>

<sup>1</sup> BMS has the right to exclusively license under a master collaboration agreement

<sup>2</sup> Pembrolizumab provided through a clinical trial collaboration and supply agreement with Merck.

<sup>3</sup> Ikena has a worldwide exclusive license except China and Taiwan from AsAI.

## Our Leading Investors and Partners

As of December 31, 2020, we have raised over \$160 million from leading life sciences investors and companies, including \$120.0 million from our issuance of Series B preferred stock in December 2020 led by Omega Funds and including participation from Fidelity Management and Research Company, Surveyor Capital (a Citadel company), Invus, Farallon Capital Management, BVF Partners, L.P., Cowen Healthcare Investments, Logos Capital, and HealthCor Management. Existing investors Atlas Venture, OrbiMed and BMS all participated in the financing. In addition to the equity investments noted above, we received an aggregate of \$80.5 million in January 2019 as part of our strategic collaboration with Celgene Corporation (now BMS). This collaboration covers two of our tumor microenvironment programs, an AHR antagonist (IK-175) and a recombinant human kynurenine-degrading enzyme (IK-412). If BMS elects to license each of our programs, we are entitled to an aggregate of \$90.0 million in opt-in fees, and up to \$265.0 million in regulatory milestones and \$185.0 million in commercial milestones for each program as well as a tiered royalties at rates ranging from the high single to low double digit percentages based on worldwide annual net sales.

## Our Strategy

We are dedicated to bringing next generation targeted oncology therapies to cancer patients. We plan to achieve this goal by leveraging our deep understanding of complex biologic pathways and biomarker-driven discovery and clinical development. The key components of our strategy are as follows:

- **Rapidly advance IK-930 through clinical development.** We are developing IK-930, an oral small molecule inhibitor of TEAD to evaluate its potential to bring single agent therapeutic benefit to patients with tumors harboring genetic mutations in the Hippo signaling pathway. Our clinical development strategy is designed to rapidly achieve clinical proof-of-concept and to leverage the potential for fast-to-market opportunities in orphan indications, and to expand in broader indications through



combination treatments with other targeted therapies to address therapeutic resistance, such as with epidermal growth factor receptor, or EGFR, inhibitor. We are conducting IND-enabling studies of IK-930 and intend to submit an IND in the second half of 2021 and expect to begin a Phase 1 clinical trial shortly thereafter.

- **Expediently progress a development candidate for the RAS signaling program through clinical development.** We have discovered small molecule inhibitors of ERK5 in the RAS signaling pathway that we believe may have the potential to bring therapeutic benefit to patients with KRAS mutant cancers, which have a high unmet medical need. We plan to pursue clinical development of oral ERK5 inhibitors both as single agent in KRAS mutated pancreatic and lung cancer and in combination with other targeted therapies to address resistance to mitogen-activated protein kinase, or MEK, inhibitors. We anticipate nominating a development candidate and initiating IND-enabling studies in the second half of 2021 and anticipate submitting an IND in the second half of 2022.
- **Deepen our pipeline of biomarker-driven targeted oncology programs.** We are currently pursuing discovery-stage programs against targets that are key drivers of cancer progression and in indications with high unmet medical need, in addition to TEAD and ERK5, in particular in the RAS pathway. In addition to internally identified targets, we plan to opportunistically in-license or acquire discovery and clinical programs for which we can leverage our expertise in drug discovery and structural biology-guided chemistry, with a focus on mechanisms of actions targeting cancer drivers that complement our existing targeted oncology programs.
- **Maximize the value of our pipeline by retaining commercial rights to our targeted oncology programs.** As we seek to expand our targeted oncology pipeline and advance it rapidly through proof-of-concept clinical trials, we plan to build a fully integrated, biotechnology company. We hold worldwide development and commercial rights to our targeted oncology programs, and we intend to continue to develop our capabilities in late stage clinical development and commercialization to maximize the potential value of these programs. Given that our targeted oncology programs have broad applicability, we may also opportunistically enter into strategic partnerships to maximize the value potential, as well as clinical and commercial impact of our overall pipeline.
- **Develop IK-175 and IK-412, our BMS-partnered programs, through Phase 1b clinical trials and achieve key near-term financial milestones.** BMS, our strategic partner, has the exclusive right to license each of IK-175 and IK-412 worldwide through completion of the Phase 1b clinical trials. If BMS exercises both licenses, we would receive \$90 million in opt-in fees, which would provide a meaningful source of non-dilutive capital. We would have the right to receive clinical, regulatory and commercial milestone payments and royalties on worldwide net sales. We are currently conducting a dose expansion cohort of the open-label Phase 1 clinical trial of IK-175 in bladder cancer patients with activated AHR enriched with an AHR biomarker using our proprietary assay. For IK-175, we anticipate initiating the Phase 1b combination arm with nivolumab in patients with bladder cancer in the first half of 2021 and completing enrollment in both treatment arms in the second half of 2022. For IK-412, we intend to submit an IND in the second half of 2021.

### **Our Research & Development Expertise**

We employ a patient-centric R&D approach across discovery chemistry and biology, translational science and clinical development for our targeted oncology and tumor microenvironment therapies. Using this approach, we have discovered or developed five oncology programs that include four product candidates since we commenced operations in 2016: two of which are currently in clinical development, two of which are in IND-enabling studies and one program in discovery.

We select new programs based on two key strategic principles:

- Cancer driver targets must have a compelling biological rationale, including:
  - Tumor intrinsic changes such as mutations, gene fusions, and gene amplifications; and

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- Strong clinical rationale with the potential to develop a first-in-class or best-in-class therapeutic.
- Alignment with a translational path in disease indications with high unmet medical need, including:
  - No currently approved therapies, or patient populations that are underserved by current treatments; and
  - A biomarker-driven proof-of-concept clinical development plan.

We pursue the discovery and development of small molecule modulators of targets in any target classes that meet these key strategic principles. To date, we have pursued programs and product candidates against transcription factors, kinases, receptors and tumor microenvironment metabolites.

We believe our expertise, capabilities and experience in discovering small molecules using structural biology-guided chemistry and *in vivo* systems to optimize pharmaceutical properties to rigorously select the best molecules, is key to our progress to date. In parallel to selecting lead small molecules, we are generating translational insights and discovering biomarkers to select patients who we believe may be most likely to benefit. We take a holistic view of the entire R&D process to design a focused clinical strategy to maximize the probability of success for each program, integrating collective knowledge of discovery and translational science, in order to select what we believe are the most relevant tumor types and the patients who may benefit the most.

Early in the R&D process, we identify biomarkers to support which tumor types we may pursue in the clinic and to help determine which patients with the selected tumor types may be better suited for our therapies. Because our pipeline has been focused on programs where there are no approved product candidates, we have had to discover novel biomarkers internally to enable indication and patient selection strategies, as well as develop new assays to measure these biomarkers in the clinic. We are currently using these biomarkers across our pipeline using techniques and assays such as LC-MS/MS for metabolites analysis, RNASeq for gene signature, immunohistochemistry, or IHC, next generation sequencing, or NGS, and chemokine/cytokine profiling. For example:

- For TEAD, we plan on using NGS to select patients with genetic alterations in the Hippo signaling pathway, such as Neurofibromatosis 2, or NF2, loss and/or YAP1 and TAZ gene fusions.
- For IK-175, we are currently enrolling bladder cancer patients selected for a new IHC biomarker we developed that measures activated AHR. We are also using an internally discovered AHR-activated gene transcription signature, measured by RNASeq, to inform indication selection.
- For IK-007, we identified PGEM as a biomarker that we believe correlates with clinical benefit. We then generated a validated LC-MS/MS assay to enable prospective patient enrollment in our ongoing clinical study.

Members of our R&D leadership and executive teams bring 23 years of experience on average and have contributed to over 50 INDs and 14 regulatory approvals throughout their careers at both biotech and pharma companies. In addition, we have recently formed a multidisciplinary scientific advisory board, or SAB, that will bring extensive strategic, clinical, translational and drug development expertise. Our SAB members include George Demetri, M.D., (Chair) Director of the Ludwig Center at Dana-Farber/Harvard Cancer Center, Kevan Shokat, Ph.D., Professor and Vice-Chair, Department of Cellular and Molecular Pharmacology at the University of California San Francisco, and Josep Taberner, M.D., Ph.D., Head of the Medical Oncology Department at the Vall d'Hebron Barcelona Hospital and Director of the Vall d'Hebron Institute of Oncology.

We are continuing to execute our patient-centric R&D approach as planned and we are currently working on a number of early stage discovery programs in the targeted oncology space. Moreover, we are developing a preclinical-stage gut-preferred AHR agonist program for treatment of inflammatory bowel disease, or IBD, including in patients who have caspase recruitment domain-containing protein 9, or CARD9, polymorphisms. We plan on exploring a partnership for this non-core program in the second half of 2021.

## **Our Programs**

### **Targeted Oncology Programs**

#### ***IK-930, a TEAD inhibitor***

IK-930 is an internally discovered oral small molecule inhibitor of the TEAD family of transcription factors in the Hippo signaling pathway that is undergoing IND-enabling studies. We believe that IK-930 is one of the most advanced TEAD inhibitors currently in development for this important, but historically undruggable, target. TEAD functions as the ultimate step in the Hippo signal transduction pathway by driving expression of genes involved in cell proliferation and survival. The Hippo pathway is widely accepted as a key and prevalent driver of cancer pathogenesis and is genetically altered in approximately 10% of all cancers, and such genetic alterations are often associated with poor clinical outcomes.

IK-930 is a novel inhibitor of TEAD that exploits a recently discovered and promising binding pocket on TEAD to enable the inhibitory effect upon the Hippo pathway. TEAD activity is dependent on binding of the fatty acid palmitate to a central lipid pocket. IK-930 blocks palmitate from binding TEAD, thereby disrupting TEAD-dependent gene transcription. The mechanism of action of IK-930 is differentiated from historically unsuccessful attempts that targeted protein-to-protein interactions, or PPIs, using either small molecules or cyclic peptides. Using structural biology-guided chemistry, we were able to generate novel TEAD inhibitor compounds across several chemical series directed to this binding pocket in TEAD and profile them using various *in vitro* and *in vivo* assays assessing potency, selectivity, tolerability and activity. By selecting IK-930 based upon these characteristics, we believe IK-930 has the potential to bring therapeutic benefit to patients with tumors harboring genetic mutations in the Hippo signaling pathway. Moreover, activation of the Hippo pathway confers resistance to certain targeted therapies, such as EGFR inhibitors and MEK inhibitors, which supports the potential for IK-930 to be combined with these therapies to overcome therapeutic resistance.

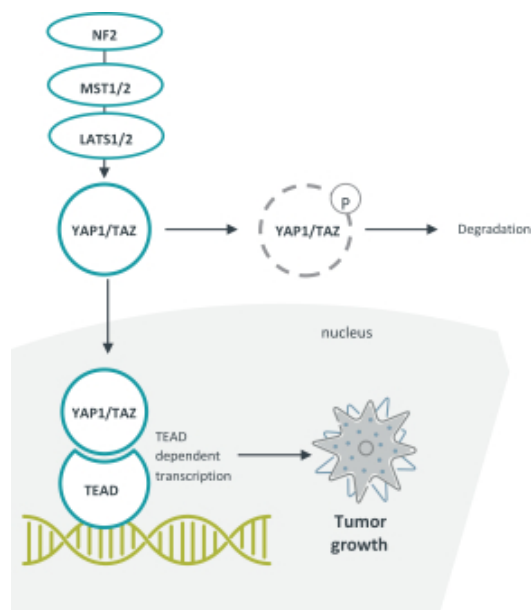
We are conducting IND-enabling studies of IK-930 and intend to submit an IND in the second half of 2021 and expect to begin a Phase 1 clinical trial shortly thereafter. In our Phase 1 clinical trial, we expect to evaluate IK-930 as a monotherapy in orphan Hippo-mutated cancers in order to establish proof-of-concept, and in combination with other targeted agents to address therapeutic resistance in more prevalent tumor indications characterized by genetic alterations, including EGFR.

#### ***Role of the Hippo pathway and TEAD in oncology***

The Hippo pathway is a highly conserved developmental signaling pathway that modulates the regulation of multiple biological processes including cell proliferation, survival, differentiation, organ size, and tissue homeostasis. Dysregulation of the Hippo pathway is associated with the induction of hyperproliferation, cellular invasion, metastasis, cancer cell maintenance and therapeutic resistance and has been linked to other pro-tumorigenic activities such as activation of regulatory T cells.

The Hippo signaling cascade begins with NF2, a gene that encodes the scaffold protein merlin, which links multiple extracellular cues to an intracellular signaling cascade. Merlin activates the kinases MST1 and MST2, or MST1/2, which subsequently phosphorylate and activate the kinases LATS1 and LATS2, or LATS1/2. LATS1/2 phosphorylates two key transcriptional coactivators of TEAD: YAP1 and TAZ. When phosphorylated, YAP1 and TAZ are sequestered to the cytoplasm where they are targeted for proteasome-mediated degradation. When the upstream portion of the signaling cascade is inactivated through normal regulation or through inactivating mutations, YAP1 and TAZ are not phosphorylated and can shuttle into the nucleus. Once inside the nucleus, YAP1 and TAZ bind TEAD to enable the transcription of TEAD target genes.

### Schematic diagram of the Hippo pathway



Beyond the role of certain Hippo pathway alterations in driving cancer, several pathway components are known to drive resistance to targeted therapies such as EGFR inhibitors. Published data from patient tumor samples shows that, upon acquired resistance to EGFR inhibitors through specific mutations in EGFR, there is an increase in nuclear YAP1 in tumors as compared to baseline. In EGFR mutant lung cancer cell lines *in vitro*, the increase in nuclear YAP1 was observed to lead to increased TEAD activity as measured by higher levels of TEAD gene transcription. These data suggest that the addition of a TEAD inhibitor to an EGFR inhibitor regimen in patients with EGFR resistant tumors may be able to overcome therapeutic resistance to EGFR inhibition.

We believe that blocking TEAD-mediated cell proliferation through direct TEAD inhibition could be an important therapeutic intervention for patients with Hippo pathway mutations.

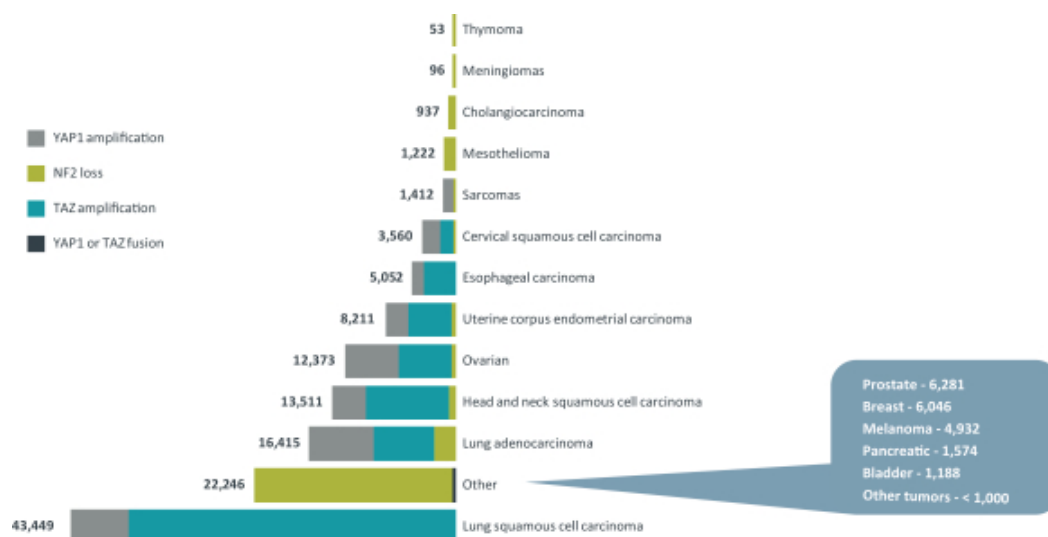
#### ***Epidemiology of Hippo pathway driven cancers***

Published literature suggests that approximately 10% of all cancers have dysregulation of the Hippo pathway and subsequent activation of TEAD. Dysregulation can occur at multiple nodes within the pathway. For example, NF2 can undergo inactivating mutations and YAP1 and TAZ can undergo gene amplification. These genetic alterations lead to tumor formation in mouse models and therefore are believed to be genetic drivers of cancer. Moreover, there is cross-talk between the Hippo pathway and multiple other signal transduction pathways, such as EGFR, which can lead to aberrant TEAD activation.

We estimate that approximately 125,000 newly diagnosed cancer patients annually within the United States have tumors which harbor genetic alterations in the Hippo pathway, based on the incidence of cancers with YAP1 and TAZ gene amplification or fusion as well as NF2 loss.

The figure below illustrates the incidence of individuals with newly diagnosed cancers that harbor Hippo pathway genetic alterations in the United States on an annual basis.

### Incidence of Hippo pathway genetic alterations



Genetic alterations in the Hippo pathway are present in diverse cancer types but there are certain cancers, including more prevalent indications such as lung squamous cell carcinoma, and rarer indications such as mesothelioma and sarcoma, which are reported to have a particularly high incidence of genetic alterations in the Hippo pathway and where alterations are considered to drive tumor formation and growth and are associated with a poor patient prognosis:

- The Hippo pathway is one of the most dysregulated signal transduction pathway in cancer. Loss of function mutations in NF2 are found in approximately 40% of cases of malignant mesothelioma and are associated with poor prognosis, including a significantly shorter progression free survival and overall survival.
- Multiple soft tissue sarcomas have YAP1 and TAZ gene fusions. For example, approximately 90% of epithelioid hemangioendothelioma, or EHE, have TAZ-CAMTA1 fusions and the remaining 10% have YAP1-TFE3 fusions, which are directly linked to the etiology of these cancers.
- In squamous lung cancer, YAP1 and TAZ amplifications are found in approximately 6% and 29%, respectively, based on internal analysis of The Cancer Genome Atlas (TCGA) using the Genome Data Commons and cBioportal tools.

Beyond the role of certain Hippo pathway alterations in driving cancer, several pathway components are known to drive resistance to targeted therapies such as EGFR inhibitors. Approximately 30% of patients with non-small-cell lung carcinoma, or NSCLC, will have EGFR mutations. Tagrisso (osimertinib) is an EGFR inhibitor approved for the first-line treatment of patients with NSCLC whose tumors have certain EGFR mutations. Despite the robust clinical activity exerted by osimertinib, patients often develop resistance to this treatment, which poses a significant challenge due to the scarcity of post-osimertinib pharmacological options available to date. Early use of osimertinib raises the question of the optimal management of osimertinib resistance and the role of targeted agent combinations in this patient population. We believe this population also represents a substantial opportunity for TEAD inhibitors. Published data from patient tumor samples shows that, upon acquired resistance to EGFR inhibitors through specific mutations in EGFR, there is an increase in nuclear YAP1 in tumors as compared to baseline. In EGFR mutant lung cancer cell lines *in vitro*, the increase in nuclear YAP1 was observed to lead to increased TEAD activity as measured by higher levels of TEAD gene transcription. These data suggest that the addition of a TEAD inhibitor to an EGFR inhibitor regimen in patients with EGFR

resistant tumors may be able to overcome therapeutic resistance to EGFR inhibition. We have generated preclinical data supporting our belief of the clinical opportunity to treat EGFR resistant patients with IK-930.

### ***Disease Overview***

The epidemiology findings in mesothelioma, EHE, soft tissue sarcomas as well as other solid tumors including meningioma point to the critical role of the Hippo pathway in tumor formation. In addition to the strong biological rationale for pursuing development of IK-930 in these cancers, we believe that these are areas of high unmet medical need in which IK-930 has the potential to provide meaningful clinical benefit to patients.

- Malignant mesothelioma is a rare cancer in the tissue lining the lungs, and is a very aggressive cancer with a poor prognosis. After initial diagnosis, patients are reported to have a median life expectancy of 15 months. Approximately 3,000 people in the United States are diagnosed with mesothelioma each year. On average, about 2,500 mesothelioma-related deaths occur in the United States each year. There are few effective treatment options for advanced unresectable malignant mesothelioma and to date only two treatments have been approved by the FDA for the treatment of this condition. The combination of cisplatin and pemetrexed was the first systemic treatment approved by the FDA in 2004, followed only by the May 2020 FDA approval of Nivolumab in combination with ipilimumab. Even with this newly approved treatment, the median overall survival of these patients is 18 months, with most of the patients eventually progressing and dying from their disease. Approximately 40% of malignant mesothelioma patients are associated to NF2 deficiency and this genetic alteration has been described to contribute to asbestos-induced mesotheliomagenesis in animal models, showing that NF2 drives the malignant behavior of this subset of mesothelioma cases.
- In addition to mesothelioma, meningioma also has high frequency of NF2 deficiency. Meningioma is the most common central nervous system, or CNS, tumor, accounting for approximately one-third of primary CNS tumors. Surgery and/or radiation therapy, or RT, constitute the initial therapeutic approach for meningiomas. Furthermore, surgery and/or RT can control disease in some patients with recurrence. Unfortunately, despite the appropriate use of surgery and RT for initial disease management and management of recurrent disease, there is a subset of patients in whom disease cannot be controlled with local approaches. Experience with systemic treatments is limited and although several agents have been studied, none have an established role in prolonging progression-free survival or overall survival. The outcome of this subset of patients with persistent or recurrent meningiomas continues to be poor, underscoring the substantial need for new therapies.
- Soft Tissue Sarcomas, or STS, represent a rare and heterogeneous group of solid tumors derived from mesenchymal progenitor cells and characterized by a variety of genetic alterations. Recent molecular and genetic studies in large cohorts of STS cases have demonstrated an essential role of YAP1/TAZ in sarcomagenesis, implying that a YAP1/TAZ directed therapeutic approach could represent a rational strategy in a selected subgroup of these tumors. STS account for 1% of all adult malignancies. While the clinical outcome of these diseases has improved in the last decade with the use of anthracycline-based chemotherapy and the introduction of novel therapies targeting different cell pathways and the use of immune checkpoints, the prognosis for a significant subgroup of patients with STS is still poor and there is an unmet medical need for these patients. For these reasons, the identification of novel molecular targets is important in these rare malignancies. Recent studies in a large cohort of STS tumors showed that myxoid liposarcomas, synovial sarcomas and angiosarcomas, in addition to EHE, expressed the highest levels of YAP1/TAZ gene expression, potentially driving tumorigenesis in these subsets of STS.
- EHE is a rare STS that grows from the cells that make up the lining of blood vessels with an incidence of one case per million people. This cancer can occur anywhere in the body with the most common sites being the liver, lungs, and bone. It usually occurs in people between 30 and 50 years of age but can occur in young children and older people. Surgery and radiotherapy have been used as treatment for localized disease and several interventions have been used with palliative intent in the recurrent or

metastatic cases, including steroids, interferon, and others, but there is currently no specific targeted therapy approved for the treatment of EHE.

- Despite the successful expansion of personalized oncology using targeted therapies to selectively treat patients with specific mutations in key oncogenic drivers, intrinsic and acquired resistance to targeted agents is a growing clinical problem. Activation of YAP1/TAZ has been associated with the development of resistance to various targeted agents, including in EGFR mutant NSCLC, and in KRAS mutant tumors such as pancreatic carcinoma, CRC, and NSCLC. In EGFR mutant NSCLC, the successful development of anti-EGFR inhibitors has improved the clinical outcome for these patients in not only advanced but also early disease and has become a new therapeutic paradigm for this patient population. However, the most efficient approach to managing emerging resistance to EGFR inhibitors remains to be determined.

### **Our Solution, IK-930**

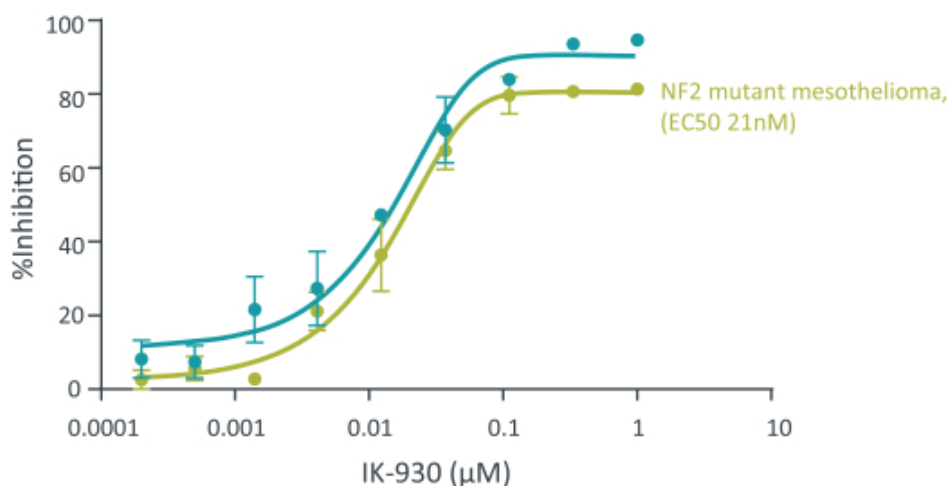
IK-930 is an oral small molecule inhibitor of TEAD that binds to a recently discovered lipid binding pocket on TEAD itself. TEAD activity is dependent on binding of the fatty acid palmitate to a central lipid pocket. IK-930 blocks palmitate from binding TEAD, thereby disrupting TEAD-dependent gene transcription. The mechanism of action of IK-930 is differentiated from historically unsuccessful attempts that targeted PPIs using either small molecules or cyclic peptides. It is often difficult to discover compounds that disrupt PPIs with sufficient potency due to the typically undruggable shallow PPI pockets and large surface areas that make up tight PPIs. We believe that targeting the lipid binding pocket of TEAD has the potential to yield more potent and selective molecules as compared to these historical attempts. Using structural biology-guided chemistry, we were able to generate novel TEAD inhibitor compounds across several chemical series directed to this binding pocket in TEAD and profile them using various *in vitro* and *in vivo* assays assessing potency, selectivity, tolerability and activity. We are currently conducting IND-enabling studies and we intend to submit an IND in the second half of 2021.

We believe that IK-930 is one of the most advanced TEAD inhibitors in development and compares favorably to other TEAD inhibitors based on publicly available information. Moreover, we believe we are well positioned given our ongoing translational work, the planned breadth of our strategy for clinical development and ability to prospectively enrich programs to select patients most likely to benefit from IK-930 using our biomarkers.

We have generated preclinical data supporting our belief of the clinical opportunity to treat EGFR resistant patients with IK-930. Based on our preclinical studies, we believe IK-930 is a potent, well tolerated and selective TEAD inhibitor with favorable pharmacologic properties. In a TEAD reporter cell line, IK-930 inhibited TEAD-dependent transcription with an EC<sub>50</sub> of 25 nM, and inhibited proliferation of H226 cells, an NF2 mutant mesothelioma cell line, with an EC<sub>50</sub> of 21 nM, demonstrating that IK-930 has high potency in inhibiting activated Hippo signaling in cultured cancer cells.

The figure below illustrates the inhibition of TEAD by IK-930.

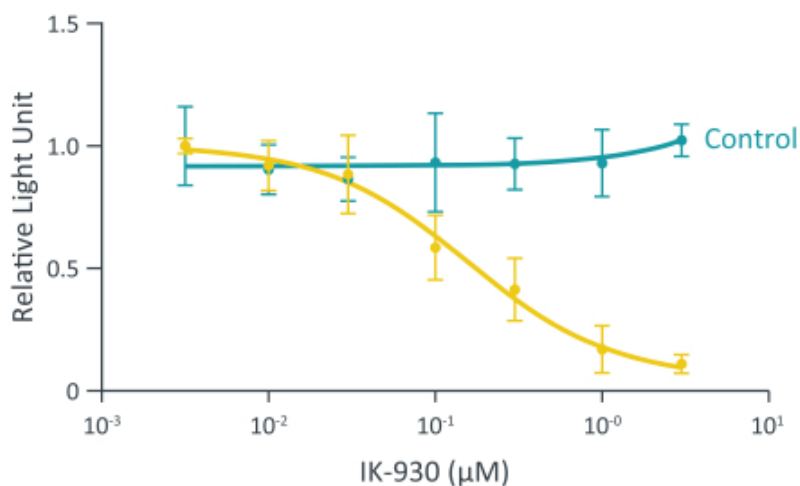
### Inhibition of TEAD by IK-930 blocks TEAD-dependent transcription and proliferation in H226 cells containing an NF2 mutation



The ability of IK-930 to selectively inhibit proliferation in Hippo pathway mutated cells was demonstrated in the H28 mesothelioma cell line which does not have any Hippo pathway mutations. This cell line is insensitive to IK-930. However, knockdown of NF2 using CAS9-CRISPR converts H28 into an IK-930 sensitive tumor.

The figure below illustrates IK-930 blocking the proliferation of cells with NF2 loss but not in cells with normal NF2.

### IK-930 blocks proliferation in cells with NF2 loss but not in cells with normal NF2



We also observed that IK-930 was significantly selective for TEAD as assessed in these cell-based assays relative to a safety panel of 45 receptors, enzymes and ion channels, a human ether-a-go-go related gene, or hERG, assay and a panel of Cytochrome P450, or CYP, inhibition assays.

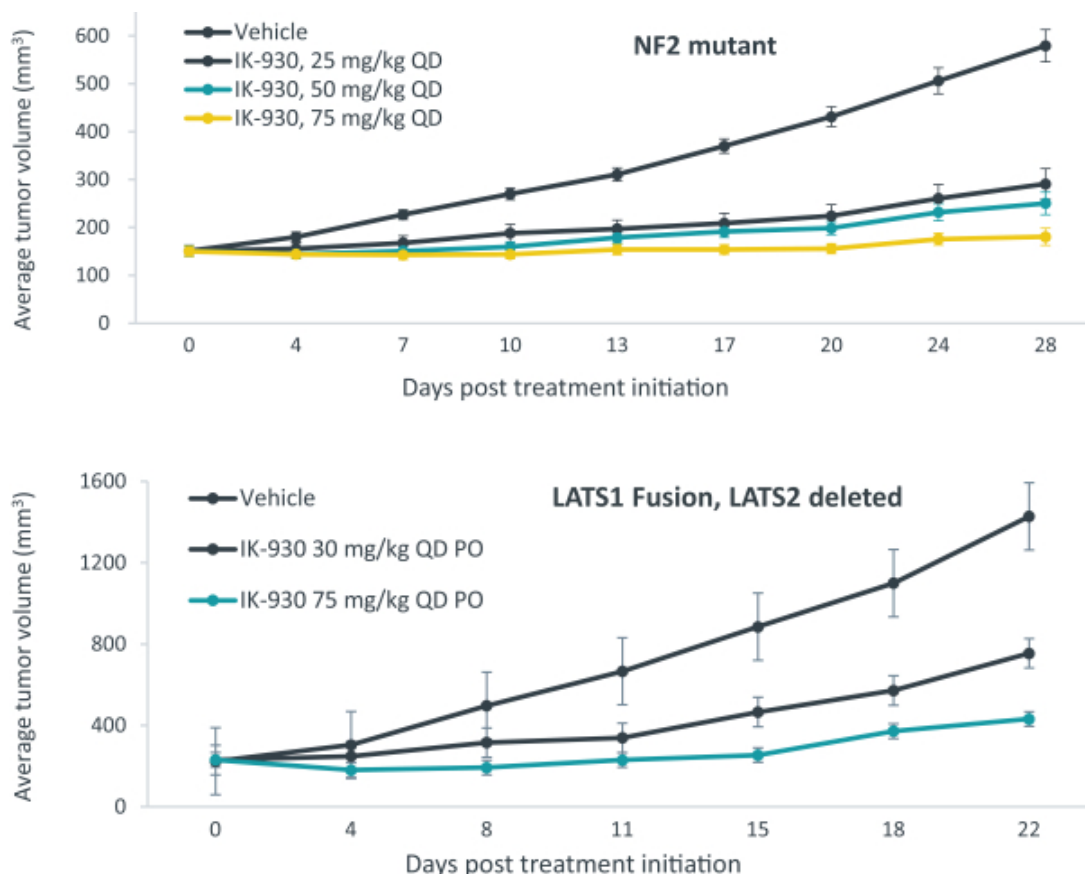
We observed favorable PK/PD of IK-930 in preclinical studies. We observed that IK-930 exhibited anti-tumor activity in tumor models with Hippo pathway mutations. IK-930 dosed in a H226 NF2 mutant mouse xenograft



model led to antitumor activity throughout the treatment period. We observed similar activity in a xenograft model using a LATS1 fusion/LATS2 deleted tumor model. IK-930 dosed in NF2 mutant and LATS1 fusion/LATS2 deleted mouse xenograft models led to tumor growth inhibition compared to vehicle.

The figures below illustrate the antitumor activity of IK-930 in Hippo mutant xenograft models.

**Antitumor activity of IK-930 in Hippo mutant xenograft models**



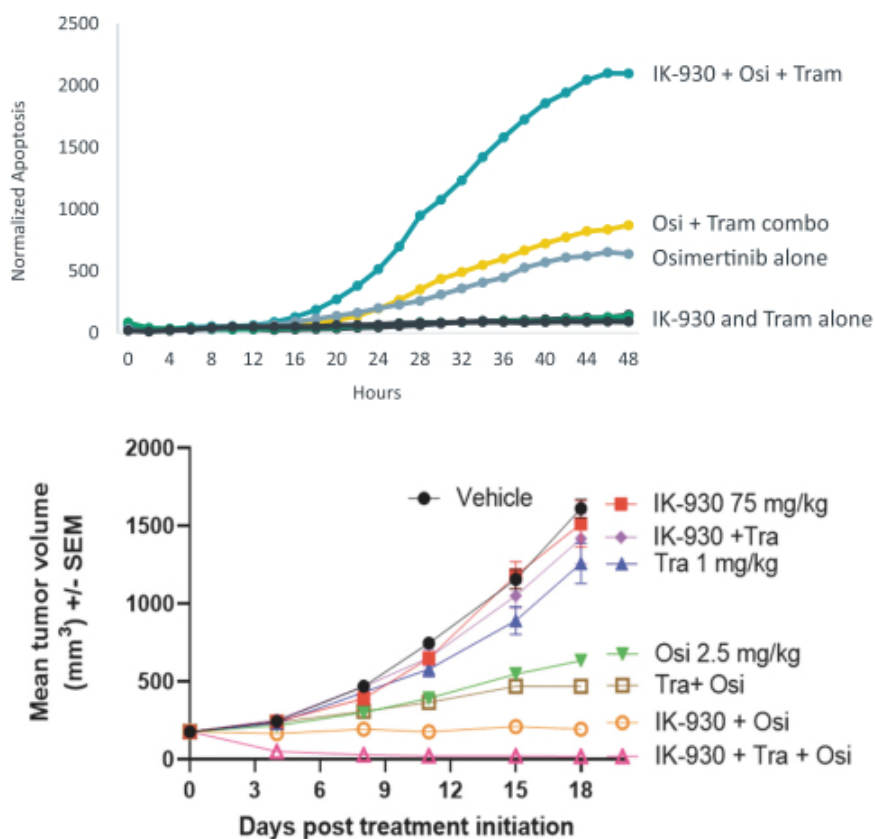
In addition to potential for single agent activity in tumors with genetic alterations in the Hippo pathway, we believe there is an opportunity for IK-930 to be beneficial in combination with other targeted therapies in the therapeutic resistance setting. For example, YAP1 activation (nuclear localization) has been shown to drive resistance to EGFR targeted therapies. NSCLC patients who develop resistance to EGFR inhibitors have higher levels of nuclear YAP expression in their tumors compared to baseline.

We have generated robust preclinical data supporting our confidence in the clinical opportunity to treat EGFR resistant patients with IK-930. We observed *in vitro* that inhibitors of EGFR (osimertinib) promote YAP1 nuclear localization in EGFR mutant NSCLC cells. Moreover, we observed that IK-930 is able to kill EGFR resistant lung cancer cells *in vitro* in combination with osimertinib. We observed increased apoptosis *in vitro* and activity *in vivo* of IK-930 combined with EGFR inhibition. In the H1975 EGFR mutant lung cancer xenograft mouse model, we observed meaningful tumor growth inhibition in the group treated with IK-930 in combination with osimertinib, as well as complete regressions in the group treated with IK-930 in combination with osimertinib

and trametinib, a MEK inhibitor, supporting that shutting down the mitogen-activated protein kinase, or MAPK, survival pathway further leads to robust anti-tumor activity.

The figure below illustrates *in vitro* (top) and *in vivo* (bottom) models of IK-930 in EGFR resistant lung cancer.

**IK-930 in EGFR resistant lung cancer**



**IK-930 clinical development strategy**

Given the broad role of the Hippo signaling pathway on tumor biology and cancer progression, we plan to focus development of IK-930 on biomarker selected patient populations based on NF2 loss, and/or YAP1 and TAZ gene fusion or gene amplification in patients with solid tumors. We plan to utilize a comprehensive clinical development strategy focused on genetically defined patient populations targeting indications of high unmet medical need, which includes the following components:

- Assessing potential in rapid proof-of-concept and fast-to-market opportunities of IK-930 monotherapy for patients with genetic alterations in the Hippo pathway; and
- Expanding our clinical development plan into combinations with other targeted therapies as well as larger indications.

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We expect that our Phase 1 clinical trial(s) of IK-930 will explore IK-930 as a monotherapy and in combinations with other targeted therapies. In the monotherapy arm of the trial, we plan to evaluate the safety and activity of IK-930 in rare and orphan tumors associated with specific genetic alterations such as NF2 loss. As illustrated in the figure below, in the dose escalation part of the monotherapy arm, we plan to enroll patients with tumors known to have high incidence of Hippo pathway alterations to determine the maximum tolerated dose and the recommended Phase 2 dose. In the dose expansion cohort, we plan to select patients prospectively based on specific Hippo genetic alterations such as NF2 loss and/or YAP1 and TAZ gene fusion.

### Rapid clinical POC/Fast-to-Market opportunities with IK-930 as single agent with planned expansion into combinations for broader indications



In the combination arm of the Phase 1 clinical trial, we plan to explore indications based on emerging efficacy data from the monotherapy arm, as well as genetically defined tumors with known mechanisms of therapeutic resistance where IK-930 may be able to overcome resistance to targeted therapies, such as EGFR resistant NSCLC, and potentially improve effectiveness of targeted therapies.

### ERK5 inhibitor / RAS signaling pathway inhibitor program

We are developing a novel small molecule inhibitor program of ERK5 in the RAS signaling pathway with potential for treating patients with KRAS mutant tumors. We anticipate nominating a development candidate and initiating IND-enabling studies in the second half of 2021 and plan to submit an IND in the second half of 2022. We believe that ERK5 provides an opportunity to address unmet medical need in the RAS pathway by modulating a key target that is downstream of RAS and therefore applicable to cancers with a broad range of KRAS mutations such as G12C, G12D, G12V, and G13. We believe that positive clinical data for KRAS G12C inhibitors currently in clinical development provide support for modulating targets in the KRAS pathway, including potentially G12D, G12V, G13 and others that are not being addressed by current product candidates or approved therapies. We believe that ERK5 inhibition represents a differentiated approach to address mutations in the KRAS pathway more broadly, with potential to demonstrate both potent monotherapy activity, as well as potentially broader and more durable activity in combination other targeted agents.

In preclinical models, we observed that knockout of ERK5 prevented tumor formation and improved survival in genetically engineered KRAS mutant lung and pancreatic cancer models in mice. Small molecule inhibition of the target using an ERK5 inhibitor tool compound with suboptimal pharmacokinetics blocked tumor growth in patient-derived KRAS mutated xenograft models.

We believe that inhibition of ERK5 has potential as a monotherapy in cancers with specific genetic alterations, including KRAS. In studies using a KRAS primary human tumor model of lung and pancreatic cancer, we observed synergistic effects on tumor inhibition by combining this inhibitor tool compound of ERK5 and a MEK

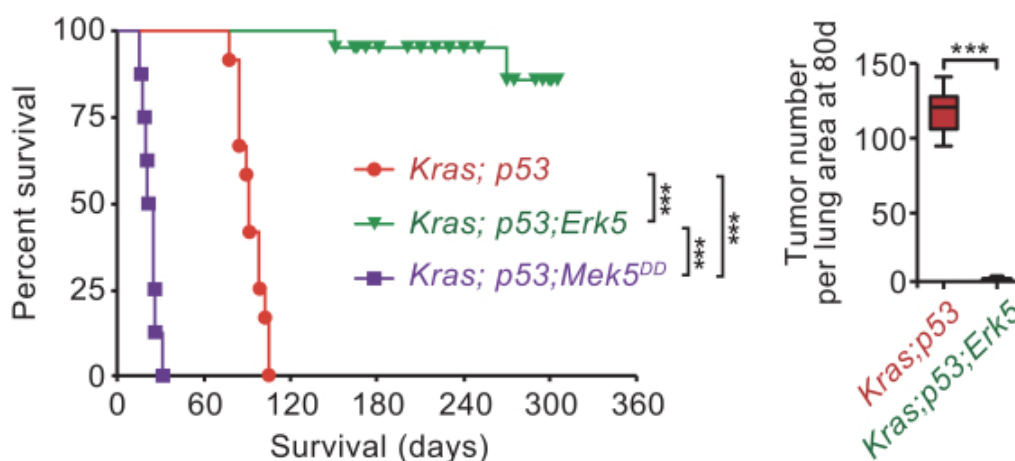
inhibitor and therefore we believe there is an opportunity to pursue development of our ERK5 inhibitor in combination with other targeted therapies such as MEK inhibitors to overcome or delay therapeutic resistance to those therapies and thereby improve the effectiveness of these therapies. We are not aware of other ERK5 inhibitors in development.

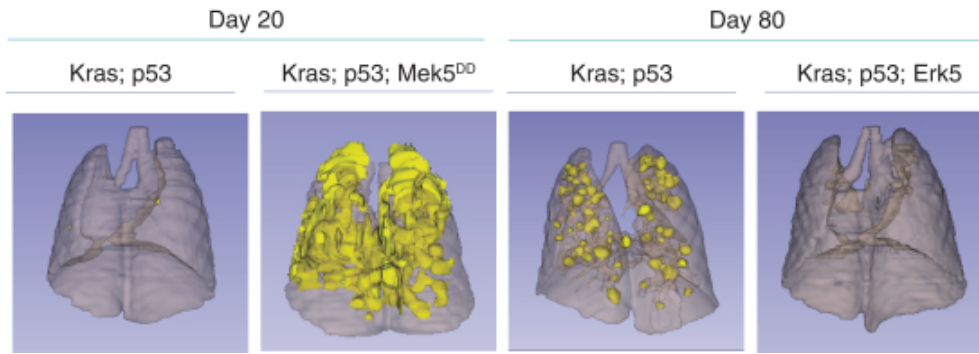
### ERK5 Rationale

ERK5 is a member of the MAPK family. It is composed of an N-terminal kinase domain and a C-terminal tail responsible for sub-cellular localization and transcriptional activation. ERK5 can be activated in response to a range of mitogenic stimuli such as growth factors, G protein-coupled receptor agonists, cytokines and cellular stresses (e.g., hypoxia, shear stress). Through the MAPK signaling cascade, mitogen-activated protein kinase 5, or MEK5 activates ERK5 by phosphorylating the N-terminal domain, thereby enabling ERK5 kinase activity. ERK5 is an important mediator of tumorigenesis and metastatic progression, and a fundamental component of drug resistance in cancer.

We have found an association between activated ERK5, as measured by an internally discovered ERK5 gene expression signature, and cancer types with high incidence of KRAS mutations, including pancreatic cancer, lung cancer and CRC. In our preclinical KRAS mutant tumor models of lung and pancreatic cancer, we observed that knocking out the target blocked tumor formation. For example, in a transgenic lung tumor model driven by KRAS G12D and p53 loss, in the absence of the ERK5 gene, only three of six mice formed one to two tumors over an 80-day period, while over 100 tumor lesions were observed in the lungs of mice that retained the ERK5 gene over the same 80-day period. In addition, we observed that, in the absence of the ERK5 gene in this model, survival of these mice was significantly improved. Moreover, in the same transgenic lung tumor model in which the MEK5 enzyme responsible for activating ERK5 was itself activated (MEK 5 DD), a large number of tumors formed and the survival of the mice was greatly reduced. These data, as illustrated in the figures below, suggest that ERK5 is an essential component to transduce signals in the RAS pathway and validate its key role in cancer formation.

**ERK5 knockout prevents tumor formation and improves survival in KRAS mouse lung tumor model**





As illustrated in the figure below, we observed single agent anti-tumor activity in both a pancreatic and lung patient derived xenografts in mice using a small-molecule ERK5 inhibitor. This inhibitor is a potent and selective tool compound with high selectivity for ERK5 but has a short half-life and short PD effect.

**ERK5 inhibition reduces tumor growth in patient-derived mouse xenograft models of pancreatic and lung cancer**



Moreover, in preclinical studies in KRAS primary human tumor models of lung and pancreatic cancer, we observed synergistic effects on tumor inhibition by combining this inhibitor tool compound of ERK5 and trametinib. These models contained high unmet medical need mutations in the RAS pathway. These data, as illustrated in the figure below, suggest that, in addition to single agent potential in KRAS-mutated cancers, there is potentially a clinical opportunity for ERK5 inhibitors to be used in combination with MEK inhibitors and other targeted therapies to address therapeutic resistance in these patient populations.

**Synergistic combination of MEK inhibitor and ERK5 inhibitor in KRAS mutant pancreatic (left) and lung (right) primary human tumor xenografts**



### ***ERK5 Opportunity and Disease Overview***

Despite continuous industry efforts in the past several decades to develop therapies for KRAS mutant cancers, therapies directly targeting KRAS G12C are only now beginning to show clinical promise. For example, Amgen recently reported proof-of-concept in topline Phase 2 clinical trial results of their KRAS G12C inhibitor Sotorasib in advanced NSCLC. In the United States, about 13% of patients with NSCLC harbor the KRAS G12C mutation. Although there has been recent progress with these compounds that directly inhibit mutant KRAS, the majority of the KRAS space remains open. At this time, 85% of KRAS mutations (G12D, G12V, G13, others) are not being addressed by current product candidates or approved therapies. KRAS mutations are estimated to occur in about 26% of all cancers, including 25% of lung cancers, 90% of pancreatic cancers and between 27% and 56% of colorectal cancers. We believe that ERK5 represents a differentiated opportunity to address these high unmet medical need segments by modulating a key node downstream in the RAS signaling pathway. The three indications we plan to initially focus on are NSCLC, pancreatic cancer and CRC, which we believe are indications where there is strong biologic rationale for ERK5 inhibition and significant unmet medical need.

- *NSCLC*: There are an estimated 228,000 new cases of lung cancer diagnosed and approximately 135,000 deaths in the United States annually. NSCLC is estimated to account for approximately 80% to 85% of lung cancer cases and KRAS mutations are estimated to occur in about 25%. Previously, patients were treated primarily with radiation therapy or combinations of cytotoxic drugs. In the past 15 years, a number of targeted agents have been developed based on alterations in the genes for EGFR and anaplastic lymphoma kinase gene, or ALK, significantly improving the outcome of patients with NSCLC harboring these genetic alterations. Furthermore, in the last five years, the introduction of immunotherapy for the treatment of NSCLC patients has also improved the outcome of the treatment in patients, especially those with high PD-L1 expression. However, a significant proportion of NSCLC patients are ineligible for these novel therapies or develop resistance to existing treatments, representing an important unmet medical need. Approximately two-thirds of NSCLC patients are ineligible for treatment with EGFR or ALK targeted therapies, representing an important unmet medical need. Despite the availability of these new therapies, the prognosis in NSCLC remains poor, with an overall five-year survival for all patients diagnosed with NSCLC estimated to be approximately 19% and until recently there were no specific therapeutic options for this subset of patients. Even with the emergence of KRAS inhibitors targeting G12C mutations, most NSCLC patients with KRAS mutations will eventually progress and die due to their disease. An ERK5 inhibitor potentially could provide significant clinical benefit to patients with KRAS mutations as a monotherapy as and in combination to patients whose tumors have developed resistance to EGFR therapies.
- *Pancreatic cancer*: The American Cancer Society estimates that about 57,600 patients will be diagnosed with pancreatic cancer in 2020. The tendency of pancreatic cancer to spread silently before diagnosis makes it one of the deadliest cancer diagnoses. In metastatic pancreatic cancer, surgery and radiation are used only for symptom control. Chemotherapy, such as gemcitabine and 5-FU/leucovorin/oxaliplatin/irinotecan, can help improve pancreatic cancer symptoms and survival. The drug olaparib (Lynparza) has been approved for metastatic patients with the BRCA gene mutation whose cancer has responded well to chemotherapy. Unfortunately, in spite of the development of new treatments for pancreatic cancer, deaths due to this tumor are on the rise. The National Cancer Institute has identified targeting oncogenic RAS as one of the four major priorities for pancreatic cancer research. In that context, the development of an ERK5 inhibitor potentially could represent a promising strategy to achieve improvement in outcomes for patients with advanced pancreatic cancer.
- *CRC*: CRC is the second leading cause of cancer deaths in the United States. Despite the reduction of incidence and improvement of early detection in the United States, approximately 86% of patients are diagnosed after the onset of symptoms when their disease is relatively advanced. Patients with advanced CRC are treated with radiation and chemotherapy drugs such as 5-fluorouracil, oxaliplatin and capecitabine, as well as recently approved antibodies, that inhibit angiogenesis, such as bevacizumab. In a subset of CRC patients, treatment with antibodies targeting epidermal growth factor receptor, or EGFR, (for example, the agent cetuximab) has been shown to be effective both as

monotherapy and in combination with chemotherapy. However, approximately 40% of patients have a mutation in the KRAS gene that renders cetuximab ineffective. We believe an ERK5 inhibitor could restore sensitivity to EGFR inhibitors when given in combination.

#### ***Our solution, ERK5 inhibitor program***

We are developing oral small molecule inhibitors of ERK5 and we believe there are currently no other ERK5 inhibitors in development. We plan to initially focus our development efforts in lung and pancreatic cancer due to the strong biological rationale and large market opportunity. Lead optimization is ongoing using structural biology-guided chemistry and we anticipate nominating a development candidate and initiating IND-enabling studies in the second half of 2021. Our goal in lead optimization is to identify a novel, potent, selective, oral inhibitor of ERK5 with an optimized pharmacokinetic profile as compared to the existing ERK5 inhibitor tool compound. In addition, we have developed *in vitro* assays to determine the best compound to take forward into clinical development. We are also developing reagents that will allow us to look at the pharmacodynamics of selected compounds, including antibodies that detect active ERK5.

#### **Earlier stage RAS programs**

Beyond TEAD and ERK5, we are developing early stage discovery programs in targeted oncology and applying our patient-centric research and development approach. We have efforts underway to explore additional programs in the RAS pathway. We are focused on well-known targets and mutations in this pathway that lack approved or effective therapies and therefore represent high unmet medical needs and expect to nominate the first development candidate resulting from these discovery programs in 2022.

#### **Tumor Microenvironment Programs**

##### **BMS-Partnered Programs: IK-175 and IK-412**

We have two programs partnered with BMS which validates our capabilities and approach to rapidly advance internally developed product candidates into clinical development using biomarker-driven strategies. IK-175 is an inhibitor of AHR and patients with activated AHR are currently being enrolled in the dose expansion cohort of a Phase 1 clinical trial of patients with locally advanced or metastatic solid tumors, including bladder cancer. IK-412 is an enzyme therapy designed to lower levels of immunosuppressive kynurenine in the tumor microenvironment, and we are currently conducting IND-enabling studies. BMS, our strategic partner, has the exclusive right to license each of IK-175 and IK-412 through completion of the Phase 1b clinical trials. If BMS exercises both licenses, we would receive up to \$90 million in opt-in fees, which could provide a meaningful and non-dilutive source of capital. We would have the right to receive clinical, regulatory and commercial milestone payments and royalties on worldwide net sales.

##### ***Recent Developments with the IDO1/TDO2 Pathway and Differentiation of Our Programs***

Our tumor microenvironment programs explore promising immunosuppressive pathways including the IDO1 pathway. We have developed two programs in the IDO1 pathway (IK-175 and IK-412), each of which are partnered with BMS, which are differentiated from IDO1 inhibition preclinically by inhibiting bypass mechanisms to IDO1, including the TDO2 pathway which epacadostat or linrodostat do not modulate. We believe the IDO1 pathway remains a promising immunosuppressive pathway in cancer with strong clinical and translational rationale, based on recent supportive emerging data indicating that epacadostat was severely underdosed (by six-fold) in the Phase 3 clinical trial in melanoma patients, suggesting that the IDO1 pathway has not yet been adequately tested. In addition, BMS is developing an IDO1 inhibitor, linrodostat, which is in Phase 3 clinical trials in combination with nivolumab and/or neoadjuvant chemotherapy in muscle invasive bladder cancer, which we believe has the potential to further validate our approach.

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Based on preclinical data, both IK-175 and IK-412 were observed to provide greater immune stimulation and tumor growth inhibition *in vivo* compared to epacadostat. In addition, we have identified certain proprietary biomarkers expressed in cancer patients which we believe indicates a higher likelihood of responding to our therapies. For IK-175, for example, we are currently enrolling bladder cancer patients selected for a novel IHC biomarker we developed internally that measures activated AHR. For IK-412, we are exploring an enrichment strategy based on high serum kynurenine levels in these patients.

### **IK-175, an AHR antagonist**

IK-175 is a potent, selective oral antagonist of AHR. We observed evidence of potent antitumor activity of IK-175 as a monotherapy and in combination with an anti-PD-1 antibody in preclinical models. We are currently enrolling patients with bladder cancer with activated AHR in a dose expansion cohort of a Phase 1 clinical trial of IK-175 as a monotherapy. We also plan to evaluate IK-175 in combination with BMS' nivolumab in the Phase 1b portion of the clinical trial. Pursuant to our master collaboration agreement with Celgene Corporation (now BMS), or the BMS Collaboration Agreement, we are responsible for development of IK-175 through the completion of a Phase 1b clinical trial, through the completion of which BMS has an exclusive right to license IK-175 worldwide. See “—License and Collaboration Agreements—Master Collaboration Agreement with Bristol-Myers Squibb” for additional information.

### ***Dual role of AHR in cancer progression***

AHR is a ligand-dependent transcription factor that drives tumor progression through direct cancer cell and immunosuppressive effect in the tumor microenvironment. In some tumors, such as bladder cancer, high levels of AHR lead to constitutive, always-on activation and direct stimulation of tumor cell growth. AHR is also a critical component of a dominant immunosuppressive pathway in cancer, a pathway that modulates the function of cells in both the innate and adaptive components of the immune system. AHR is, in its inactive form, found in the cytosol, outside the nucleus. Upon binding of a signaling molecule or ligand, AHR migrates to the nucleus and functions as a transcription factor.

AHR is overexpressed and constitutively activated in a number of tumors, including, but not limited to, bladder cancer and advanced breast cancer. Constitutive activation of AHR also has been reported in head and neck squamous cell carcinoma as well as castration-resistant prostate cancer. In melanoma, constitutive activation of AHR is believed to represent a significant mechanism of resistance to approved inhibitors of BRAF kinase. Inhibition of constitutively active AHR in patient-derived acute myeloid leukemia cells has been shown to sensitize these cells to killing by natural killer cells.

### ***Bladder cancer overview***

We prioritized patients with bladder cancer as a lead indication for the development of IK-175 based on the following:

- Poor prognosis of patients with bladder cancer is associated with a high AHR transcript profiling score;
- High levels of AHR mRNA and protein as measured by immunohistochemistry and RNAscope are found in bladder cancers;
- AHR amplifications have been described in approximately 5% to 22% of bladder cancer patients; and
- Nuclear localization of AHR is high in bladder cancers.

Bladder cancer is the most common malignancy involving the urinary system and there were an estimated 81,400 new cases of bladder cancer and 17,980 deaths in the United States in 2020. The five-year survival for patients with early stage disease is 88%; however, for patients with metastatic disease or cancer that has spread to other parts of the body, the five-year survival drops to 5%.



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The most common treatment for patients diagnosed with advanced or metastatic bladder cancer is chemotherapy with platinum-based drugs such as carboplatin or cisplatin in combination with gemcitabine. Patients with metastatic disease that progresses during or after platinum-based chemotherapy are increasingly being treated with checkpoint immunotherapy. A number of PD-1 and PD-L1 checkpoint inhibitors have been approved by the FDA for the treatment of patients with refractory bladder cancer. Objective response rates in clinical trials with checkpoint inhibitors have generally been between 13% and 29%. The median overall survival of patients with advanced or metastatic bladder cancer from the start of initial therapy is 12.7 months.

We began our ongoing trial of IK-175 with enrolling patients with solid tumors with a specific focus on urothelial (bladder) cancer patients based on the high unmet medical need in bladder cancer and the biological rationale of the role of AHR in this tumor type. We are currently enrolling bladder cancer patients, irrespective of prior anti-PD-1 therapy, and have a biomarker for AHR that can help identify patients whose pathway is activated. For the combination arm with nivolumab that we expect to initiate in the first half of 2021, bladder cancer patients will have been treated with nivolumab or other PD-1 therapy prior to be enrolled onto that arm. Moreover, we will seek to enroll a subsection of patients who are AHR biomarker positive in the combination arm.

### ***Our solution, IK-175***

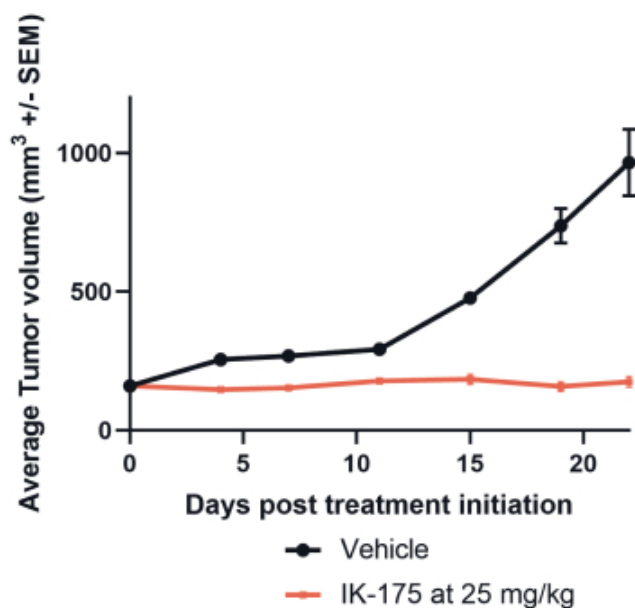
IK-175 is an internally discovered small molecule AHR antagonist that we are developing for the treatment of advanced or metastatic solid tumors, including bladder cancer where AHR-activation is known to lead to poor prognoses. We observed that IK-175 is potent and selective for AHR in multiple *in vitro* assays and species.

We are currently enrolling patients with locally advanced or metastatic solid tumors in an open-label Phase 1 clinical trial evaluating IK-175 as a monotherapy, including a dose expansion cohort for patients with bladder cancer. Clinical pharmacokinetic and pharmacodynamic data supports once-daily clinical dosing in patients.

### ***IK-175 preclinical data***

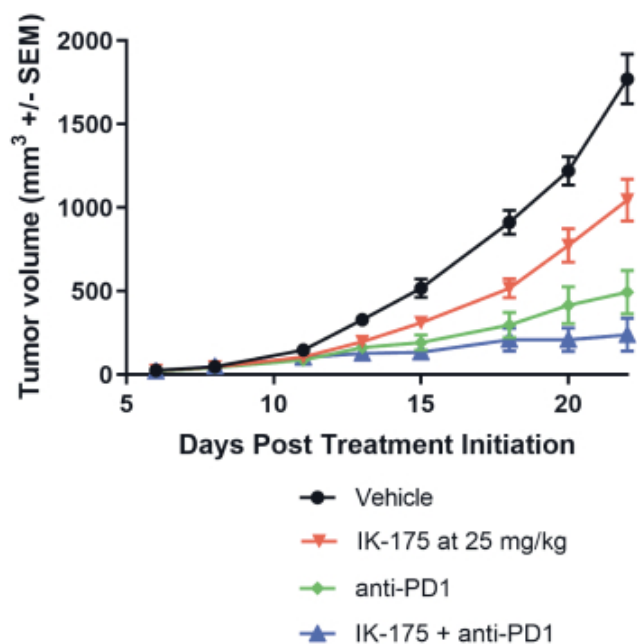
In preclinical studies, we observed that inhibition of AHR by IK-175 has potent antitumor activity in AHR-dependent tumors and led to immune-driven antitumor responses. CAL-27 is an oral squamous cell carcinoma in which AHR is constitutively active. Over 92% of CAL-27 cultured cells *in vitro* were found to have AHR localized in the nucleus compared to less than 13% of cells from normal tissue. Based upon these findings, we assessed the direct antitumor effect of IK-175 in a CAL-27 xenograft model. This model uses an immunocompromised mouse, which allows us to minimize the potential role of IK-175 in tumor immune regulation and isolate the direct antitumor function of IK-175. In this model illustrated in the figure below, monotherapy treatment with 25 mg/kg of IK-175 arrested tumor growth.

**Direct anti-tumor activity of IK-175 in a CAL-27 immunocompromised mouse model**



We also assessed the tumor immune activity of IK-175 alone and in combination with anti-PD-1 antibody in a CT-26 colon cancer model in immune competent mice. Four days after inoculation of CT-26, we initiated once daily oral dosing with vehicle control or 25 mg/kg IK-175 and continued for 53 days. Concurrently, 10 mg/kg of an anti-PD-1 antibody was administered twice a week for a total of 5 doses. Monotherapy with IK-175 resulted in an approximately 41% inhibition of tumor growth. Treatment with an anti-PD-1 antibody alone resulted in tumor growth inhibition of approximately 72% and four complete responses out of ten mice. The combination of IK-175 and an anti-PD-1 antibody resulted in an approximately 87% inhibition of tumor growth including complete responses in seven out of ten mice. Mice with complete responses were re-challenged with CT-26 tumor cells after 95 days and were found to be resistant to tumor formation with only one small tumor (>104 mm<sup>3</sup>) detected in one mouse of the seven tested. We believe that the improved antitumor activity and long-term antitumor memory observed in these studies is due to the ability of both IK-175 and anti-PD-1 antibody to overcome independent mechanisms of tumor immunosuppression. In contrast to IK-175, epacadostat does not have activity in the CT-26 model (see “—IK-412 preclinical data”).

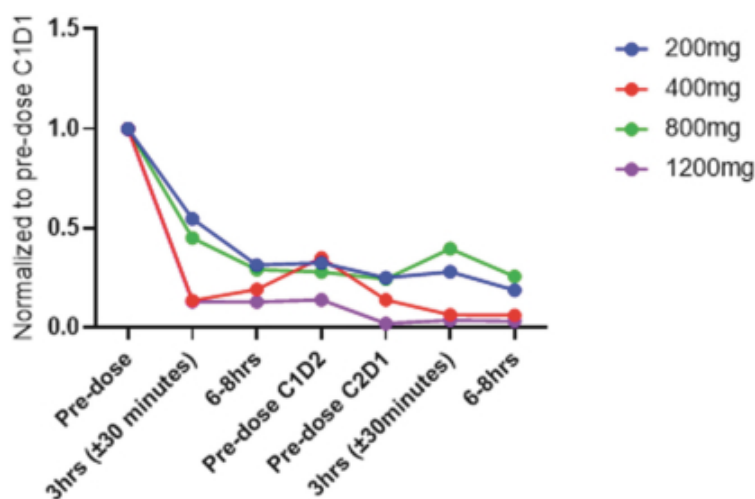
**Immune-stimulated anticancer activity of IK-175 in a CT-26 immunocompetent mouse model**



***Ongoing Phase 1 clinical trial***

We are currently enrolling patients with locally advanced or metastatic solid tumors in an open-label Phase 1 clinical trial evaluating IK-175 as a monotherapy, including a dose expansion cohort for patients with bladder cancer. The primary endpoint of this trial is safety and tolerability. As of January 1, 2021, we have dosed patients in the 200 mg, 400 mg, 800 mg, 1200 mg and 1600 mg once daily monotherapy dose escalation cohorts. We have not observed any dose limiting toxicities, or DLTs, to date and have not reached the maximum tolerated dose. In the first four dose cohorts, we observed dose responsive target gene inhibition in whole blood assay from patient samples, as set forth in the graph below. We have also recently initiated monotherapy expansion at 1200 mg in urothelial carcinoma patients with activated AHR in their tumors.

### IK-175 target modulation in patients



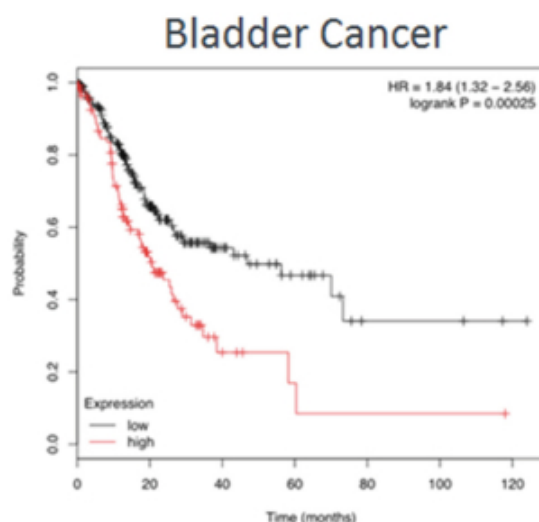
We plan to initiate the Phase 1b portion of the clinical trial design, evaluating the combination of IK-175 with nivolumab, BMS' PD-1 inhibitor, in patients with bladder cancer, in the first half of 2021.

#### ***IK-175 indication and patient selection strategy***

Our IK-175 clinical development strategy is focused on enrolling patients who are most likely to respond to an AHR antagonist. We have explored three tumor profiling technologies centered on AHR to help guide indication selection and/or candidate patients:

- AHR gene amplification: Increases in the number of copies of the AHR gene as assessed by Fluorescent In Situ Hybridization, or FISH, are observed in over 5% of multiple cancers such as esophageal, bladder and lung cancers.
- Nuclear localization of AHR: Constitutive activation of AHR leads to its localization to the nucleus, which can be directly measured by a proprietary immunohistochemical staining assay that we developed. In the monotherapy expansion cohort, we are prospectively enriching for patients with tumors that exhibit activated AHR using this assay.
- AHR-dependent gene transcription: Activation of AHR leads to changes in transcription of many genes which can be quantified by standard mRNA transcription profiling technologies. We discovered this gene transcription expression signature. We generated a profile of the transcriptional changes induced by AHR activation across a panel of cell lines. We then used this profile to score tumors based on available transcript profiling data in public databases. We found that bladder cancer patients with transcriptional profiles that scored highest using our activated AHR profile had poorer prognoses compared to those with low scores, as illustrated in the figure below.

## AHR-activated gene transcription signature is associated with poor overall survival in bladder cancer patients



### ***IK-175 development plan***

We are currently enrolling patients with locally advanced or metastatic solid tumors in an open-label Phase 1 clinical trial evaluating IK-175 as a monotherapy, including a dose expansion cohort for patients with bladder cancer. We have recently initiated the monotherapy dose expansion cohort at 1200 mg in bladder cancer patients with tumors that exhibit activated AHR, using an assay that we developed. We plan to initiate the Phase 1b portion of the clinical trial in the first half of 2021 by opening a combination arm of the ongoing trial to combine IK-175 with nivolumab, BMS' PD-1 inhibitor, in patients with bladder cancer and expect to complete enrollment in both treatment arms in the second half of 2022. Moreover, we plan to initiate a clinical trial in a second solid tumor indication in the second half of 2021.

### **IK-412, a recombinant human kynurenine-degrading enzyme**

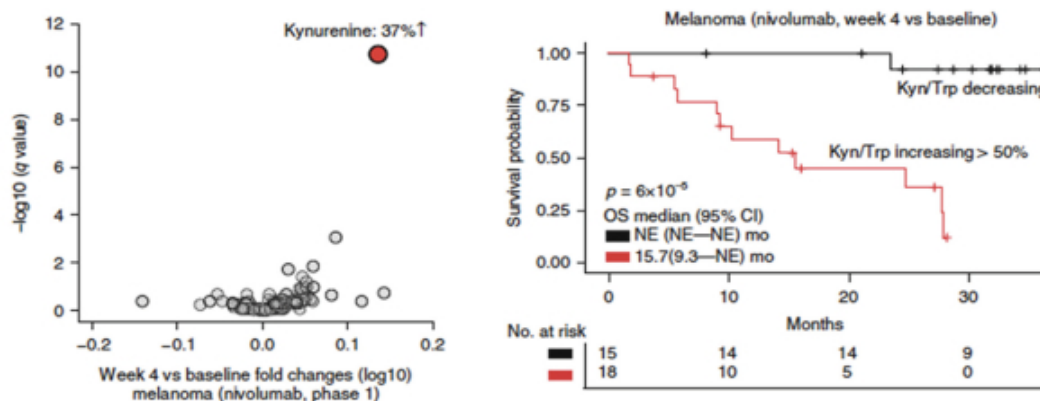
IK-412, is a recombinant human kynurenine-degrading enzyme intended to catalyze the degradation of kynurenine, an immunosuppressive metabolite that is present in tumors and in the blood of certain cancer patients and is generated by the enzymes IDO1 and TDO2. We believe IK-412 inhibits the IDO1 pathway in a manner that selective IDO1 inhibitors are able to achieve, by degrading kynurenine regardless of whether it is synthesized by IDO1 or TDO2. In preclinical studies, IK-412 was observed to lead to durable and profound depletion of over 95% of serum levels of kynurenine, as compared to 50% for the IDO1 inhibitor epacadostat. IK-412 has been optimized for enzymatic activity and stability in plasma which we observed in non-human primates to be consistent with weekly or biweekly dosing in humans. Based on preclinical data, we also believe IK-412 has the potential to overcome PD-1 checkpoint inhibitor resistance. We have also observed antitumor activity when dosed both as a monotherapy and in combination with checkpoint inhibitors and increased overall survival when dosed in combination with checkpoint inhibitors in preclinical studies. We intend to submit an IND application with the FDA for IK-412 in the second half of 2021. To inform indication selection, we have developed several translational assays, including an immunohistochemistry screen using IDO1 and TDO2 antibodies to help prioritize solid tumors. We are working to detect kynurenine in tumors and in the blood of certain patients with solid tumors.

**Immunosuppressive activity of kynurenine and role in PD-1 resistance**

Tumors take several routes to suppress destruction by the immune system. One such mechanism involves the formation of kynurenine from its precursor tryptophan by the enzymes IDO1 and TDO. TDO, which is known to be capable of metabolizing tryptophan to form kynurenine, is typically expressed in the liver, but it can also be overexpressed in multiple tumors. Various published studies indicate that there is a correlation between kynurenine production and immune suppression. Multiple therapeutic programs have been directed at inhibiting the formation of kynurenine primarily through the inhibition of the enzyme IDO1. Selective IDO1 inhibitors that have been tested in the clinic include epacadostat, developed by Incyte Corporation, or Incyte. It was recently disclosed that epacadostat was severely underdosed (by six-fold) in a Phase 3 clinical trial in patients with metastatic melanoma when used in combination with pembrolizumab, suggesting that the IDO1 pathway has not yet been tested adequately in humans. We believe IK-412 may provide a more potent and robust way of impinging on this important pathway by inhibiting the downstream of IDO1 and TDO2, where the pathways converge.

Another important aspect of kynurenine is the way that tumors appear to use it to resist or lessen the impact of treatment with checkpoint inhibitors. As illustrated in the figure below, treatment of melanoma patients with BMS' nivolumab was found to increase the levels of multiple metabolites, but not more significantly than kynurenine. Using the ratio of kynurenine to tryptophan as a metric of the relative conversion of tryptophan to kynurenine, it was observed that this ratio spanned a range of eight-fold among patients. Strikingly, melanoma patients in which this ratio increased over four weeks of nivolumab treatment, consistent with the formation of kynurenine, had significantly reduced survival, 15.7 months, compared to patients with a decreasing ratio, over 85% of which survived over 38 months. A similar trend was observed in renal carcinoma cancer with patients with increasing ratios having a 16.7 month mean overall survival and those with decreasing ratios with a mean 31.3 month overall survival. These results suggest that reducing the ratio of kynurenine to tryptophan may improve the therapeutic efficacy of checkpoint inhibitors such as nivolumab.

**Increased serum kynurenine to tryptophan ratio is associated with worse overall survival in melanoma**

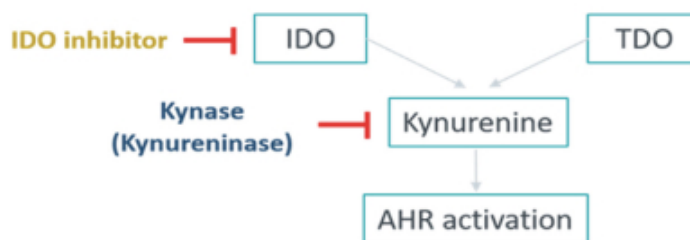


**Our solution, IK-412**

IK-412, our therapeutic candidate, is a recombinant human enzyme that breaks down kynurenine, leading to durable elimination of over 95% of serum levels of kynurenine in animal models after a single dose. We believe that IK-412's robust ability to degrade kynurenine in a durable manner, regardless of its source from IDO1 or TDO2, has the potential to be differentiated from other selective kynurenine-reducing approaches such as IDO1 inhibition. Moreover, given the emerging role of kynurenine in checkpoint resistance, IK-412 may be able to overcome PD-1 resistance in tumors with high IDO1/TDO2 expression. TDO2 is expressed, in addition to IDO1,

in many tumors and may make selective IDO1 inhibition insufficient to relieve the full immunosuppressive effect of kynurenine. We believe IK-412 may provide a more potent and robust way of impinging on this important pathway by inhibiting the downstream of IDO1 and TDO2, where both pathways converge, as illustrated in the figure below. IK-412 is undergoing IND-enabling studies and we intend to submit an IND in the second half of 2021.

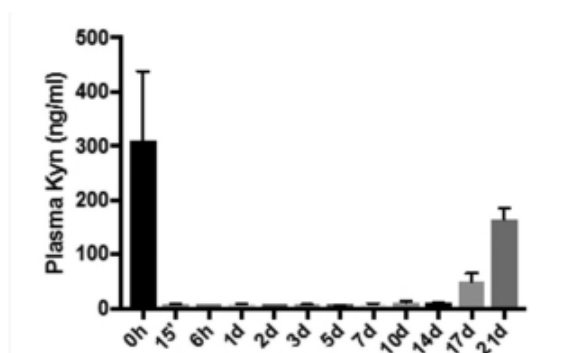
**A kynureninase acts downstream of IDO1/TDO2 thereby being able to block kynurenine irrespective of its source.**



**IK-412 preclinical data**

IK-412 is a highly active and stable human enzyme which is the product of protein engineering efforts. IK-412 contains 14 mutations compared to the native human enzyme to optimize enzymatic activity and stability in plasma required for the enzyme to be used as an oncology therapeutic. It is pegylated for stability and to reduce potential immunogenicity. IK-412 was not immunogenic after repeat dosing as assessed by Anti-Drug Antibody, or ADA, analysis in rats. As illustrated in the figure below, a single dose of 100 mg/kg of IK-412 administered to non-human primates led to rapid elimination of serum kynurenine with levels decreased by over 95% within 15 minutes. These reduced levels were maintained for at least 14 days and serum kynurenine levels were still less than half of the starting concentrations after 21 days.

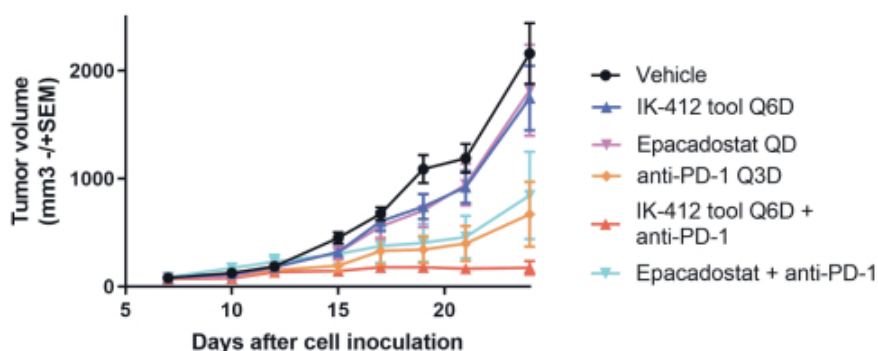
**A single dose of 100mg/kg IK-412 reduced kynurenine levels by over 95 percent for over two weeks in non-human primates**



The potential of IK-412 to overcome resistance of tumors to checkpoint inhibition was tested in a CT-26 syngeneic colon cancer mouse model. Dosing of these mice with a PD-1 checkpoint inhibitor led to approximately 63% tumor growth inhibition. Dosing with an IK-412 tool enzyme as a monotherapy had no significant effect. However, when we combined the IK-412 tool enzyme with the checkpoint inhibitor, we observed that tumor growth was significantly inhibited. In parallel, we dosed mice with a combination of

epacadostat and a PD-1 checkpoint inhibitor and observed that addition of epacadostat did not lead to any improvement in antitumor activity, as illustrated in the figure below.

**The addition of an IK-412 tool enzyme to a PD-1 checkpoint inhibitor improved antitumor activity in a CT-26 model**



**IK-412 indication selection strategy**

We are exploring multiple strategies to guide selection of tumor types for the upcoming Phase 1 clinical trial with IK-412:

- We assessed gene expression databases with the goal of identifying tumors that have high levels of expression of the genes for TDO and IDO1, the two enzymes responsible for kynurenine levels. Based on these analyses, we believe certain solid tumor types may represent attractive potential indications.
- We are also conducting an immunohistochemistry screen of a panel of tumors using IDO1 or TDO antibodies to guide selection of tumors.
- Finally, we are working to identify those tumors where increases in kynurenine levels may be associated with development of resistance to checkpoint inhibitors.

**IK-412 clinical development**

IK-412 is undergoing IND-enabling studies and we plan to submit an IND in the second half of 2021. As our translational studies continue, we will finalize our plans for clinical development. Our Phase 1 clinical trial will be designed as an open-label clinical trial to explore safety, PK/PD and preliminary efficacy of IK-412 as monotherapy and in combination with nivolumab in solid tumors. The tumors will be selected based on the presence of high levels of IDO1 and TDO2 tumor expression. We also plan to assess kynurenine levels in the blood of patients in the expansion cohorts of the study.

**IK-007, an EP4 antagonist**

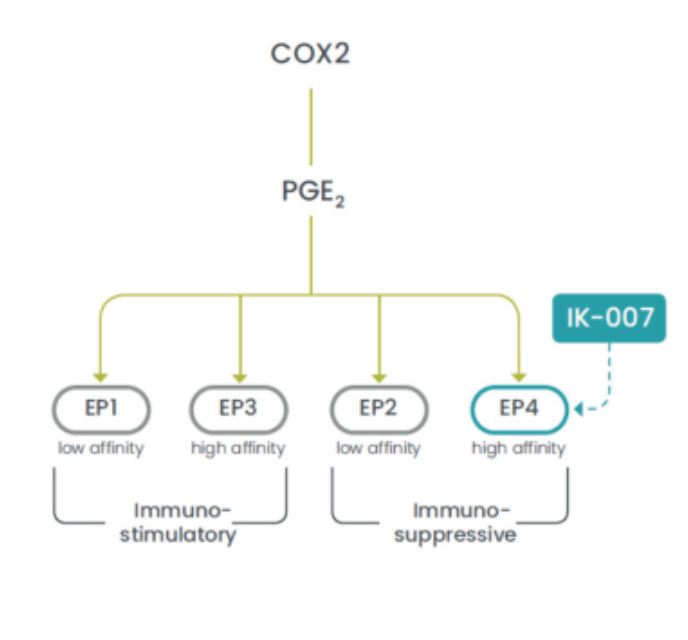
IK-007 is an oral selective antagonist of the EP4 receptor. IK-007 has been well tolerated in over 900 subjects to date in non-oncology clinical trials. We are conducting a Phase 1b clinical trial of IK-007 in combination with pembrolizumab for the treatment of patients with MSS CRC, which represents approximately 85% of patients with CRC. In this Phase 1b clinical trial, we observed encouraging preliminary evidence of antitumor activity in the initial dose escalation cohort and have not observed any DLTs. In addition, we have identified higher baseline levels of urinary PGEM, a metabolite in the EP4 pathway, as a biomarker that we believe is associated with clinical benefit. We are enrolling patients in a dose expansion cohort using baseline levels of urinary PGEM to enrich for MSS CRC patients who may be more likely to respond to treatment. We anticipate completing enrollment in the Phase 1b clinical trial in the second half of 2021.



### ***Role of EP4 Pathway in cancer***

Prostaglandin-endoperoxide synthase 2, or COX2, is an enzyme that is responsible for the production of prostaglandins during inflammation, including Prostaglandin E<sub>2</sub> or PGE<sub>2</sub>. PGE<sub>2</sub> sends its signals through four distinct receptors, known as EP1 through EP4, and these receptors in immune cells can have either stimulatory or suppressive activities. We believe that blocking immunosuppressive activity by inhibiting EP4, the higher affinity immunosuppressive receptor of PGE<sub>2</sub>, could be valuable in treating cancer. We also believe that selectively blocking PGE<sub>2</sub> signaling through EP4 could lower the likelihood of toxicities that may result from fully blocking this fundamental pathway. The figure below illustrates the mechanism of action of IK-007.

**IK-007 selectively blocks EP4, the high affinity immunosuppressive receptor in the COX2/PGE<sub>2</sub> pathway.**



A large body of literature demonstrates that activation of the PGE<sub>2</sub> pathway in cancer augments tumor initiation, progression and therapeutic resistance. Increased expression of pathway components, including EP4, is associated with decreased survival, therapeutic and preventive precedent in a number of cancer types, including CRC. When activated, EP4 affects the activity of a broad range of cells within the innate and adaptive immune system culminating in an immunosuppressive tumor microenvironment. Preclinical studies suggest that a selective antagonist of EP4 has the potential to bring therapeutic benefit to tumors such as CRC by changing the immunosuppressive tumor microenvironment so that tumors can become more accessible to the penetration of immune cells and more susceptible to the activity of checkpoint inhibitors.

### ***MSS CRC Overview***

CRC is the second leading cause of cancer deaths in the United States. The National Cancer Institute estimates that there were 147,950 new cases of CRC and 53,200 CRC related deaths in the United States in 2020. Approximately 35% of patients newly diagnosed with CRC will die within five years. PD-1 checkpoint inhibitors have been approved in a subset of CRC known as microsatellite instability-high, or MSI-H, tumors. MSI-H tumors are found in about 15% of CRC patients, with microsatellite stability, or MSS, tumors representing the

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remaining 85% of patients. The prognosis of MSS CRC patients is significantly poorer than that of MSI-H patients. MSS CRC represents a large unmet clinical need. Interim data of single agent treatment with pembrolizumab showed an overall response rate in MSS CRC of 0% (0/18).

### ***Our solution, IK-007***

IK-007 is a selective EP4 antagonist originally discovered by Pfizer that we licensed to explore as a potential cancer therapy. IK-007 has been dosed in over 900 adults in previous non-oncology clinical trials, including in two Phase 2 clinical trials on the treatment of osteoarthritic knee pain. In normal healthy volunteers studies, IK-007 was found to be well tolerated when administered as a single dose up to 1000 mg and as multiple doses up to 300 mg twice a day for 14 days. Based on the biological rationale for PGE<sub>2</sub>/EP4 in CRC and the high unmet medical need in MSS CRC, in particular given that single agent pembrolizumab is inactive in these patients, we are currently conducting a Phase 1b clinical trial of IK-007 in combination with pembrolizumab for the treatment of patients with MSS CRC. Signs of antitumor activity and a potential predictive PGE<sub>2</sub> metabolite biomarker, called PGEM, are emerging from the ongoing trial. As of January 1, 2021, we have 45 patients enrolled in our Phase 1b clinical trial and we plan to complete enrollment of our Phase 1b clinical trial in the second half of 2021.

### ***Clinical data***

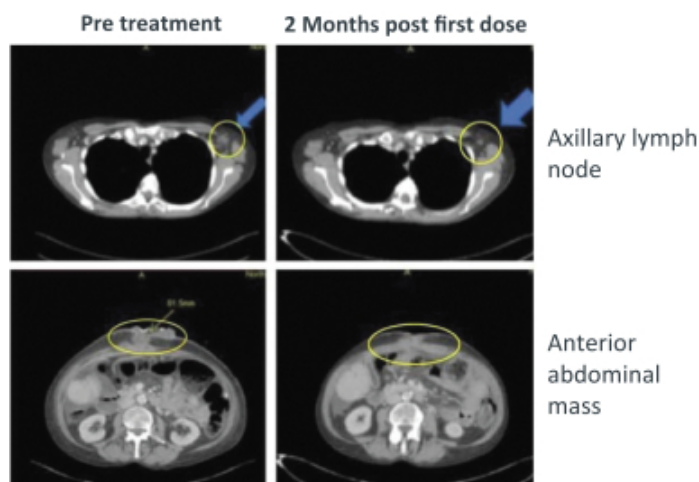
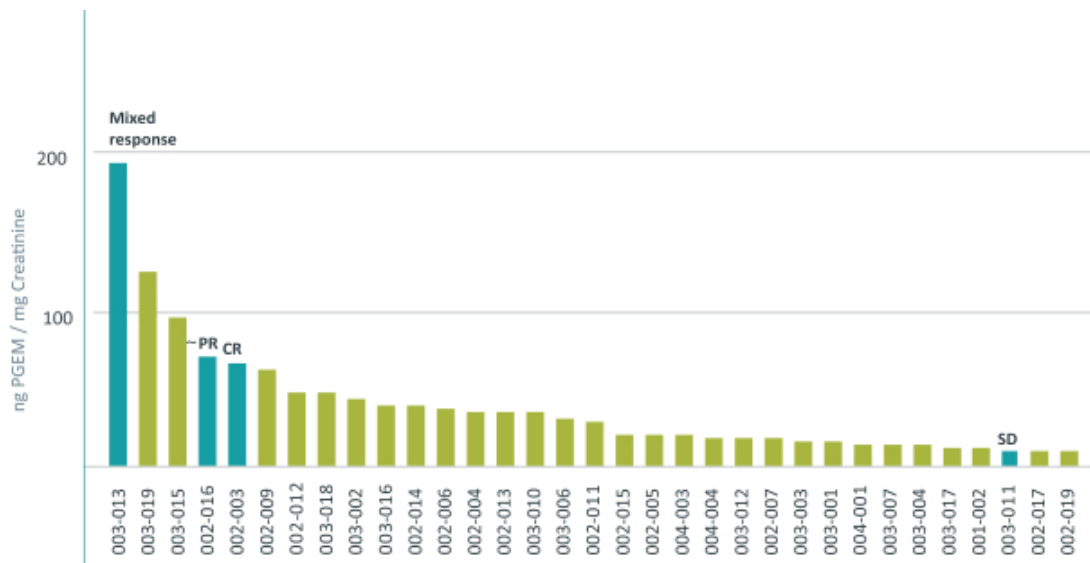
We are conducting a single arm Phase 1b clinical trial of IK-007 in combination with pembrolizumab in patients with MSS CRC patients who have received at least two lines of prior systemic therapy and progressed, and therefore unlikely to respond to pembrolizumab monotherapy.

As of January 1, 2021, we observed evidence of clinical benefit (complete response, or CR, partial response, or PR, and stable disease, or SD, for 16 weeks) in four out of 20 evaluable patients treated at 300 mg bid p.o. as follows:

- One patient had a CR and remained on study for 22 months;
- One patient experienced 29% tumor shrinkage that was close to meeting the criteria for a PR;
- One patient had durable stable disease for over six months (prolonged SD); and
- One patient had a mixed response with shrinkage of some but not all tumors and stable disease for 17 weeks (prolonged SD).

The patient who reached a CR had received five prior lines of therapy. This highly refractory patient's tumor also exhibited low tumor mutational burden, or TMB, reducing the likelihood that the antitumoral response could be due to pembrolizumab treatment alone as high TMB is often associated with response to anti-PD-1 therapies. Antitumor activity was observed soon after commencement of dosing with IK-007. A significant shrinkage of 48% of the tumor size was observed by CT scan after approximately two months of combined therapy. With additional cycles of treatment, evidence of tumor in this patient disappeared and the patient was classified as a complete responder, as illustrated in the figure below. This patient was on treatment for 22 months.

**Complete response in an MSS CRC patient treated with 300 mg IK-007 and 200 mg pembrolizumab, and association with high urinary PGEM levels.**



Moreover, we have identified a biomarker in the EP4 pathway, higher baseline levels of urinary PGEM, that we believe can help us select for patients who may benefit the most from IK-007. An ad hoc analysis of the first 33 patients enrolled in the study showed that there was a significant correlation between higher baseline levels of urinary PGEM and clinical benefit observed and with prolonged time on treatment (defined as over 16 weeks on study drug). High urine levels of PGEM (> 50 ng/mg creatinine) were present in approximately 20% (21.2% with 95% CI 9.0-38.9) of the first 33 CRC patients tested for PGEM in the study.

The most common related adverse events were Grade 1 or Grade 2 fatigue, pruritus and Grade 3 or Grade 4 increased gamma-glutamyl transferase, a liver enzyme.

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Given the early positive tolerability profile of IK-007 in the first two cohorts (300 mg BID) in combination with pembrolizumab as well as encouraging signs of activity at this dose, we amended the protocol to explore three more dose escalation levels of IK-007: 450 mg, 600 mg and 900 mg BID in combination with pembrolizumab. No DLTs in the three additional dose escalation cohorts were observed up to 900 mg BID. Most adverse events observed included myalgia, anemia, decrease appetite, insomnia and diarrhea, mostly Grade 1 or Grade 2. We also observed transient elevations of liver function tests, or LFTs, that in a few cases required IK-007 dose modifications.

Based on these data, we selected the dose of 900 mg BID of IK-007 in combination with pembrolizumab (200 mg) every three weeks for the dose expansion cohort. The trial is ongoing and will enroll up to 53 patients total, including at least ten patients with high baseline levels of urinary PGEM.

In selecting patients to receive IK-007, our objective is to focus treatment on patients who are most likely to respond. We generated a validated urine PGEM biomarker assay. We are currently using it to measure baseline PGEM urinary levels to select patients who are more likely to respond in our MSS CRC dose expansion cohort. We expect that the enrollment of the ongoing MSS CRC clinical trial will be completed in the second half of 2021.

We also conducted a second open-label single arm Phase 1b clinical trial of IK-007 in combination with pembrolizumab in patients with advanced or metastatic post anti-PD-1/L1 treatment in NSCLC. Based on the combined data generated in the interim period for efficacy and safety, we decided not to further explore this combination in NSCLC and terminated this clinical trial in December 2020.

We believe that IK-007 may have the potential to bring therapeutic benefit beyond MSS CRC and we may expand into certain additional indications in which there is high unmet medical need and biological rationale for the key role of EP4 pathway in cancer progression.

### **Competition**

The biotechnology and pharmaceutical industries are characterized by rapid innovation of new technologies, fierce competition and strong defense of intellectual property. While we believe that our pipeline and our knowledge, experience and scientific resources provide us with competitive advantages, we face competition from major pharmaceutical and biotechnology companies, academic institutions, governmental agencies and public and private research institutions, among others.

We compete in the segments of the pharmaceutical, biotechnology, and there are other companies focusing on structural biology-guided chemistry-based drug design to develop therapies in the fields of cancer and other diseases. These companies include divisions of large pharmaceutical companies and biotechnology companies of various sizes. Any product candidates that we successfully develop and commercialize will compete with currently approved therapies and new therapies that may become available in the future from segments of the pharmaceutical, biotechnology and other related markets that pursue targeted oncology therapeutics. Key product features that would affect our ability to effectively compete with other therapeutics include the efficacy, safety and convenience of our products.

We believe principal competitive factors to our business include, among other things, our ability to identify promising biomarkers, our ability to successfully transition research programs into clinical development, our ability to raise capital, and the scalability of our pipeline and business.

Our competitors may obtain regulatory approval of their products more rapidly than we may or may obtain patent protection or other intellectual property rights that limit our ability to develop or commercialize our product candidates. Our competitors may also develop drugs that are more effective, more convenient, more widely used and less costly or have a better safety profile than our products and these competitors may also be more successful than us in manufacturing and marketing their products.

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Furthermore, we also face competition more broadly across the market for cost-effective and reimbursable cancer treatments. The most common methods of treating patients with cancer are surgery, radiation and drug therapy, including chemotherapy, hormone therapy and targeted drug therapy or a combination of such methods. There are a variety of available drug therapies marketed for cancer. In many cases, these drugs are administered in combination to enhance efficacy. While our product candidates, if any are approved, may compete with these existing drug and other therapies, to the extent they are ultimately used in combination with or as an adjunct to these therapies, our product candidates may not be competitive with them. Some of these drugs are branded and subject to patent protection, and others are available on a generic basis. Insurers and other third-party payors may also encourage the use of generic products or specific branded products. We expect that if our product candidates are approved, they will be priced at a significant premium over competitive generic, including branded generic, products. As a result, obtaining market acceptance of, and gaining significant share of the market for, any of our product candidates that we successfully introduce to the market will pose challenges. In addition, many companies are developing new therapeutics, and we cannot predict what the standard of care will be as our product candidates progress through clinical development.

### ***IK-930***

We are not aware of any TEAD inhibitor in clinical development. Other companies that have publicly disclosed that they are developing preclinical stage TEAD inhibitors are: Vivace Therapeutics, Inc., Inventiva Pharma, Kyowa Kirin, and Roche/Genentech.

### ***ERK5***

We are not aware of any other ERK5 inhibitor in development. Efforts over the past several decades have failed to develop approved therapies for KRAS mutant cancers. Therapies directly targeting KRAS G12C are beginning to show clinical promise and proof-of-concept, such as AMG-510 being developed by Amgen Inc. and MRTX849 being developed by Mirati Therapeutics, Inc., both in Phase 3 in KRAS G12C mutant NSCLC.

### ***IK-175***

We are aware of one other AHR antagonist in clinical development under development by Bayer AG, or Bayer. Bayer is currently enrolling patients with advanced solid tumors in a Phase 1 trial for BAY-2416964 in advanced solid tumors.

### ***IK-412***

We are not aware of any other kynurenine degrading enzyme product candidates in development. The closest competitors are IDO/TDO inhibitors which have shown limitations in recent clinical trials. As a consequence, activity in the IDO/TDO inhibitor space has been low recently, with the exception of Incyte's epacadostat and BMS's lindorostat. BMS is actively recruiting for several clinical studies, including one Phase 3 to assess lindorostat, alone and in combination with nivolumab, in bladder cancer.

### ***IK-007***

IK-007 is one of the EP4 antagonists currently in clinical development. The other programs in clinical development are from BMS/Ono Pharmaceutical (BMS-986310 / ONO-4578), Adlai Nortye/Eisai (AN-0025 / E-7046) and Tempest Therapeutics (TPST-1495), all of which are in Phase 1 clinical trials in combination with anti-PD-1 therapy in advanced solid tumors.

## License and Collaboration Agreements

### *Master Collaboration Agreement with Bristol-Myers Squibb*

In January 2019, we entered into the BMS Collaboration Agreement with Celgene Corporation (which was acquired by BMS in November 2019) under which BMS may elect in its sole discretion to exclusively license rights to develop and commercialize compounds (and products and diagnostic products containing such compounds) that modulate the activity of two collaboration targets, kynurenine and AHR, excluding AHR agonists except for inverse agonists, or the Collaboration Candidates, which we are developing as IK-175 and IK-412. The BMS Collaboration Agreement triggered an upfront payment of \$95.0 million, which consisted of approximately \$80.5 million in cash and an equity investment of approximately \$14.5 million for which we issued 14,545,450 shares of our Series A-1 Preferred Stock pursuant to a separate stock purchase agreement.

On a program-by-program basis, through the completion of a Phase 1b clinical trial for each of IK-175 and IK-412, BMS has the exclusive right with respect to such Collaboration Candidate to a worldwide exclusive license with us to develop, commercialize and manufacture the compound (and products and diagnostic products containing such compounds) underlying such Collaboration Candidate. Additionally, if we do not complete a Phase 1b clinical trial by the end of the research term (as defined below), we may elect to provide a data package to BMS upon which BMS may exercise the foregoing option for an additional \$0.25 million fee.

If and when BMS exercises its rights for a Collaboration Candidate, and as a result of the timing of our submission of INDs with respect to each Collaboration Candidate, BMS is required to pay us \$50.0 million, in the case of an exercise of its option with respect to IK-175, and \$40.0 million, in the case of an exercise of its option with respect to IK-412. The option exercise fees are payable within fifteen (15) days after the execution of each license agreement. Upon the execution of each license agreement, we will become eligible to receive up to \$265.0 million under such license agreement in regulatory milestones and \$185.0 million in commercial milestones as well as a tiered royalties at rates ranging from the high single to low double digit percentages based on worldwide annual net sales by BMS, subject to specified reductions.

BMS will continue to pay royalties on a Collaboration Candidate-by-Collaboration Candidate and country-by-country basis, until the latest of (i) there being no valid claim under the licensed patents covering the Collaboration Candidate, (ii) expiration of all regulatory exclusivity for the Collaboration Candidate in such country, and (iii) twelve (12) years after the first commercial sale of the Collaboration Candidate in the applicable country (the Royalty Term), after which the applicable license granted to BMS in such country will become non-exclusive, fully paid-up, perpetual, irrevocable and royalty-free.

The research term under the BMS Collaboration Agreement continues for a period of five (5) years from its effective date. The term of any license agreement described above would continue on a Collaboration Candidate-by-Collaboration Candidate and country-by-country basis until the expiration of all Royalty Terms under such agreement, unless earlier terminated as described below.

The BMS Collaboration Agreement may be terminated (i) by either party on a program-by-program basis if the other party remains in material breach of the BMS Collaboration Agreement following a cure period to remedy the material breach, (ii) by BMS at will on a program-by-program basis or in its entirety, (iii) by either party, in its entirety, upon bankruptcy or insolvency of the other party, or (iv) automatically, on a program-by-program basis if BMS fails to timely deliver an opt-in notice to us.

Each license agreement may be terminated (i) by either party if the other party remains in material breach of the license agreement following a cure period to remedy the material breach, (ii) by BMS at will, (iii) by either party, in its entirety, upon bankruptcy or insolvency of the other party, or (iv) by us, in its entirety, if BMS challenges a patent licensed by us to BMS under the license agreement or any jointly-owned collaboration patents.

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Upon our termination of a license agreement for BMS' breach, bankruptcy or insolvency or patent challenge, we would receive (i) upon our timely request, a nonexclusive worldwide license under BMS' know-how and patents covering the applicable licensed compound to the extent that such compound (or product or diagnostic product containing such compound) has been or is in active development or commercialization as of termination; and (ii) subject to determination of an applicable license payment in accordance with the license agreement, an exclusive license for the foregoing. If BMS terminates a license agreement for our breach or bankruptcy or insolvency, BMS' license will survive for six (6) months. Additionally, in the event of our material breach, BMS may elect to have the license agreement continue, with all future payments under that license agreement reduced by 50%.

### ***Patent License Agreement with the University of Texas at Austin***

In March 2015, we entered into an exclusive patent license agreement, or the License Agreement, with the University of Texas at Austin, or the University, pursuant to which the University granted us a worldwide license to certain technology and IP rights relating to a kynurenine-degrading enzyme, which we are developing as IK-412.

Pursuant to the License Agreement, and we pay a license fee of approximately \$40,000 per year. We will also be obligated to make milestone payments to the University of up to an aggregate of \$0.7 million upon meeting certain development milestones and up to an aggregate of \$4.0 million upon meeting certain regulatory milestones, as well as low single digit royalties based on worldwide annual net sales on any licensed product, subject to specified reductions.

We will be obligated to continue to pay royalties on a licensed product-by-licensed product and country-by-country basis, as long as there is an existing valid claim under the licensed patents in such country.

The term of the Licensed Agreement expires on licensed product-by-licensed product and country-by-country basis until the expiration of all royalty terms, unless earlier terminated as described below.

The License Agreement may be terminated (i) by either party if the other party remains in breach of the license agreement following a cure period to remedy the breach, (ii) by us at will, (iii) by the University, in its entirety, upon our bankruptcy or insolvency, or (iv) by the University, in its entirety, if we challenge a patent licensed by the University to us under the license agreement.

### ***License Agreement with AskAt***

In connection of our acquisition of Arrys Therapeutics, Inc., or Arrys, in December 2018, we acquired in-process research and development assets related to AskAt Inc.'s, or AskAt, selective EP4 antagonists, namely IK-007 which we are currently developing in a Phase 1b clinical trial in MSS CRC and IK-008 which is a backup molecule, based on the intellectual property associated with a License Agreement, or the AskAt Agreement, between Arrys and AskAt, dated December 14, 2017. Pursuant to the AskAt Agreement, AskAt granted Arrys an exclusive license worldwide, other than China and Taiwan, to the research and development of the licensed compounds in human diseases. AskAt controls the prosecution and maintenance of all intellectual property rights pertaining the licensed technology.

Pursuant to the AskAt Agreement, we are obligated to make milestone payments to AskAt, including up to \$4.0 million upon the achievement of certain clinical development milestones, as well as milestone payments of up to an aggregate of \$600 million upon the achievement of certain worldwide annual net sales milestones. We are also obligated to pay low single-digit royalties on annual worldwide net sales on a licensed-product-by-licensed product and country-by-country basis, for the period beginning upon the first commercial sale in such country and ending upon the later of (i) 10 years from the first commercial sale in such country, or (ii) the expiration of valid claims in such country.

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The term of the AskAt Agreement expires on licensed product-by-licensed product and country-by-country basis upon the expiration of the royalty term for such licensed product, unless earlier terminated as described below.

The License Agreement may be terminated (i) by either party if the other party remains in material breach of the license agreement following a cure period to remedy the breach, (ii) by us for convenience upon 180 days' notice or (iii) by either party, in its entirety, upon bankruptcy or insolvency of the other party.

### **Intellectual Property**

We seek to protect the intellectual property and proprietary technology that we consider important to our business, including by pursuing patent applications that cover our product candidates and future products, and methods of using the same, as well as any other relevant inventions and improvements that we believe to be commercially important to the development of our business. We also rely on trade secrets, know-how and continuing technological innovation to develop and maintain our proprietary and intellectual property position. Our commercial success depends, in part, on our ability to obtain, maintain, enforce and protect our intellectual property and other proprietary rights for the technology, inventions and improvements we consider important to our business, and to defend any patents we may own or in-license in the future, prevent others from infringing any patents we may own or in-license in the future, preserve the confidentiality of our trade secrets, and operate without infringing, misappropriating or otherwise violating the valid and enforceable patents and proprietary rights of third parties.

### **Patent Protection**

As with other biotechnology and pharmaceutical companies, our ability to maintain and solidify our proprietary and intellectual property position for our product candidates, future products, and proprietary technologies will depend on our success in obtaining effective patent claims and enforcing those claims if granted. However, our pending patent applications, and any patent applications that we may in the future file or license from third parties, may not result in the issuance of patents and any issued patents we may obtain do not guarantee us the right to practice our technology or commercialize our product candidates. We also cannot predict the breadth of claims that may be allowed or enforced in any patents we may own or in-license in the future. Any issued patents that we may own or in-license in the future may be challenged, invalidated, circumvented, or have the scope of their claims narrowed. In addition, because of the extensive time required for clinical development and regulatory review of a product candidate we may develop, it is possible that, before any of our product candidates can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby limiting the protection such patent would afford the respective product and any competitive advantage such patent may provide.

The term of individual patents depends upon the date of filing of the patent application, the date of patent issuance, and the legal term of patents in the countries in which they are obtained. In most countries, including the United States, the patent term is 20 years from the earliest filing date of a non-provisional patent application. In the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the USPTO in examining and granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier expiring patent. The term of a patent claiming a new drug product may also be eligible for a limited patent term extension when FDA approval is granted, provided statutory and regulatory requirements are met. The term extension period granted on a patent covering a product is typically one-half the time between the effective date of a clinical investigation involving human beings is begun and the submission date of an application, plus the time between the submission date of an application and the ultimate approval date. The term extension period cannot be longer than five years, and the term extension period may not extend the patent term beyond 14 years from the date of FDA approval. Only one patent applicable to an approved product is eligible for the extension, and only those claims covering the approved product, a method for using it, or a method for manufacturing it may be extended. Additionally, the application for the extension must be submitted prior to the expiration of the patent in question. A patent that covers multiple products for which



approval is sought can only be extended in connection with one of the approvals. The United States Patent and Trademark Office reviews and approves the application for any patent term extension in consultation with the FDA. In the future, if our product candidates receive approval by the FDA, we expect to apply for patent term extensions on any issued patents covering those products, depending upon the length of the clinical studies for each product and other factors. There can be no assurance that our pending patent applications, and any patent applications that we may in the future file or license from third parties, will issue or that we will benefit from any patent term extension or favorable adjustments to the terms of any patents we may own or in-license in the future. In addition, the actual protection afforded by a patent varies on a product-by-product basis, from country-to-country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent. Patent term may be inadequate to protect our competitive position on our products for an adequate amount of time.

As of December 28, 2020, our overall patent portfolio includes forty-three (43) patent families comprising issued patents, pending U.S. and PCT International patent applications, and pending patent applications in foreign jurisdictions. The patents and patent applications have claims relating to our current product candidates, methods of use and manufacturing processes, as well as claims directed to potential future products and developments.

#### *TEAD Inhibitor Patent Families*

As of December 20, 2020, we solely own seven patent families related to TEAD inhibitors and degraders, compositions thereof, and methods of their use. Any U.S. or foreign patents that issue from these patent families, if granted and all appropriate maintenance fees paid, are expected to expire from 2040 to 2041, not including any patent term adjustment, patent term extension, or supplementary protection certificate (SPC).

Our current lead TEAD inhibitor, IK-930, compositions thereof, and methods of the use, are covered by pending U.S., PCT international, Taiwanese, and Argentinian patent applications that, if granted and all appropriate maintenance fees paid, are expected to expire in 2040, not including any patent term adjustment, patent term extension, or supplementary protection certificate, or SPC.

#### *EP4 Antagonists Patent Families*

As of December 28, 2020, we have an exclusive license to seven patent families directed to EP4 antagonists, crystal forms thereof, compositions thereof, and methods of their use. Any U.S. or foreign patents that issue from these patent families, if granted and all appropriate maintenance fees paid, are expected to expire from 2021 to 2036, not including any patent term adjustment, patent term extension, or SPC.

As of December 20, 2020, we and AskAt Inc. jointly own three patent families directed to EP4 antagonist compositions, methods of making certain EP4 antagonists and their formulations, and methods of their use. Any U.S. or foreign patents that issue from these patent families, if granted and all appropriate maintenance fees paid, are expected to expire in 2039, not including any patent term adjustment, patent term extension, or SPC.

As of December 28, 2020, we solely own two patent families directed to EP4 antagonist salts and crystal forms, and methods of using EP4 antagonists. Any U.S. or foreign patents that issue from these patent families, if granted and all appropriate maintenance fees paid, are expected to expire from 2039 to 2041, not including any patent term adjustment, patent term extension, or SPC.

As of December 28, 2020, our current lead EP4 antagonist, IK-007, salts and crystal forms thereof, compositions thereof, and methods of the use, are covered by over ten (10) issued U.S. patents, and by a number of pending U.S. and PCT international patent applications, and issued patents and pending patent applications in foreign jurisdictions that, if granted and all appropriate maintenance fees paid, are expected to expire from 2021 to 2041, not including any patent term adjustment, patent term extension, or SPC.

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### *AHR Antagonists Patent Families*

As of December 20, 2020, we solely own nine patent families related to AHR antagonists, compositions thereof, and methods of their use. Any U.S. or foreign patents that issue from these patent families, if granted and all appropriate maintenance fees paid, are expected to expire from 2038 to 2041, not including any patent term adjustment, patent term extension, or SPC.

As of December 20, 2020, our current lead AHR antagonist IK-175, salts and crystal forms thereof, compositions thereof, and methods of the use, are covered by two issued U.S. patents, and by a number of pending U.S. and PCT international patent applications, and pending patent applications in Europe, Japan, Australia, Canada, China, and other foreign jurisdictions that, if granted and all appropriate maintenance fees paid, are expected to expire in from 2038 to 2041, not including any patent term adjustment, patent term extension, or SPC.

### *IK-412*

As of December 20, 2020, we have an exclusive license to or solely own multiple patent families related to our IK-412 program. The IK-412 biologic drug product is covered by eight granted patents that are expected to expire between August 2034 and April 2035, not including any patent term extension, SPC, or data exclusivity. The IK-412 biologic drug product is also covered by an additional granted U.S. patent, and by at least three pending patent application families in a number of jurisdictions covering both the drug product and methods of treatment currently in clinical development, that are expected to expire between August 2035 and October 2040, if issued, not including any patent term adjustment, patent term extension, SPC or biologic market exclusivity.

### *ERK5 and RAS Signaling Pathway Program Patent Families*

As of December 20, 2020, we exclusively own six patent families related to inhibitors targeting the ERK5 and Ras signaling pathway, compositions thereof, and methods of their use, along with one patent family relating to methods for identifying cancer patients to be treated with an ERK5 inhibitor. Each patent family contains one U.S. provisional patent application. Any U.S. or foreign patents that issue from these patent families, if granted and all appropriate maintenance fees paid, are expected to expire in 2041, not including any patent term adjustment, patent term extension, or SPC.

Prosecution is a lengthy process, during which the scope of the claims initially submitted for examination by the USPTO or other foreign jurisdiction are often significantly narrowed by the time they issue, if they issue at all. Any of our pending PCT patent applications are not eligible to become issued patents until, among other things, we file national stage patent applications within 30 months in the countries in which we seek patent protection. If we do not timely file any national stage patent applications, we may lose our priority date with respect to our PCT patent applications and any patent protection on the inventions disclosed in such PCT patent applications. Our provisional patent applications may never result in issued patents and are not eligible to become issued patents until, among other things, we file a non-provisional patent application and/or PCT patent application within 12 months of filing the related provisional patent application. If we do not timely file non-provisional patent applications, we may lose our priority date with respect to our provisional patent applications and any patent protection on the inventions disclosed in our provisional patent applications. While we intend to timely file non-provisional and national stage patent applications relating to our provisional and PCT patent applications, we cannot predict whether any of our current or future patent applications will issue as patents. If we do not successfully obtain patent protection, or, if the patent protection scope is not sufficiently broad, we may be unable to prevent others from using our proprietary technology or from developing or commercializing technology and products similar or identical to ours or other competing products and technologies.

### *Trade Secret Protection*

In addition to patents, we rely on unpatented trade secrets, know-how and continuing technological innovation to develop and maintain our competitive position. However, trade secrets and confidential know-how are difficult to protect. In particular, we anticipate that with respect to the building of our compound library, our trade secrets

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and know-how will over time be disseminated within the industry through independent development and public presentations describing the methodology. We seek to protect our proprietary information, in part, by executing confidentiality agreements with our collaborators and scientific advisors and non-competition, non-solicitation, confidentiality and invention assignment agreements with our employees and consultants. We have also executed agreements requiring assignment of inventions with selected consultants, scientific advisors and collaborators. The confidentiality agreements we enter into are designed to protect our proprietary information and the agreements or clauses requiring assignment of inventions to us are designed to grant us ownership of technologies that are developed through our relationship with the respective counterparty. We cannot guarantee that we will have executed such agreements with all applicable employees and contractors, or that these agreements will afford us adequate protection of our intellectual property and proprietary information rights. In addition, our trade secrets and/or confidential know-how may become known or be independently developed by a third party or misused by any collaborator to whom we disclose such information. These agreements may also be breached, and we may not have an adequate remedy for any such breach. Despite any measures taken to protect our intellectual property, unauthorized parties may attempt to copy aspects of our products or to obtain or use information that we regard as proprietary. Although we take steps to protect our proprietary information, third parties may independently develop the same or similar proprietary information or may otherwise gain access to our proprietary information. As a result, we may be unable to meaningfully protect our trade secrets and proprietary information. For more information regarding the risks related to our intellectual property, please see “Risk Factors—Risks Related to our Intellectual Property.”

### ***Trademark Protection***

We have filed for and obtained Notices of Allowance for trademark protection with the U.S. Patent and Trademark Office for the IKENA and IKENA ONCOLOGY word marks for goods and services.

### **Commercialization**

Subject to receiving marketing approvals, we expect to commence commercialization activities by building a focused sales and marketing organization in the United States to sell our products. We believe that such an organization will be able to address the community of oncologists who are the key specialists in treating the patient populations for which our product candidates are being developed. The responsibilities of the marketing organization would include developing educational initiatives with respect to approved products and establishing relationships with researchers and practitioners in relevant fields of medicine. Outside the United States, we expect to enter into distribution and other marketing arrangements with third parties for any of our product candidates that obtain marketing approval.

### **Manufacturing**

We do not have any manufacturing facilities. We currently rely, and expect to continue to rely, on third parties for the manufacture of our product candidates undergoing preclinical testing, as well as for clinical testing and commercial manufacture if our product candidates receive marketing approval.

All of our drug candidates are small molecules and are manufactured in synthetic processes from available starting materials. The chemistry appears amenable to scale-up and does not currently require unusual equipment in the manufacturing process. We expect to continue to develop product candidates that can be produced cost-effectively at contract manufacturing facilities.

If necessary, we expect to rely on third parties for the manufacture of companion diagnostics for our products, which are assays or tests to identify an appropriate patient population. Depending on the technology solutions we choose, we may rely on multiple third parties to manufacture and sell a single test.

## Governmental Regulation

The FDA and other regulatory authorities at federal, state and local levels, as well as in foreign countries, extensively regulate, among other things, the research, development, testing, manufacture, quality control, import, export, safety, effectiveness, labeling, packaging, storage, distribution, recordkeeping, approval, advertising, promotion, marketing, post-approval monitoring and post-approval reporting of drugs and biologics. We, along with our vendors, contract research organizations, or CROs, clinical investigators and contract manufacturing organizations, or CMOs will be required to navigate the various preclinical, clinical, manufacturing and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval of our product candidates. The process of obtaining regulatory approvals of drugs and biologics and ensuring subsequent compliance with appropriate federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources.

In the United States, where we are initially focusing our drug development, the FDA regulates drug products under the Federal Food, Drug, and Cosmetic Act, or FD&C Act, and biologics under the FD&C Act and the Public Health Service Act, or PHSA, as amended, their implementing regulations. Both drugs and biologics are also subject to other federal, state and local statutes and regulations. If we fail to comply with applicable FDA or other requirements at any time with respect to product development, clinical testing, approval or any other regulatory requirements relating to product manufacture, processing, handling, storage, quality control, safety, marketing, advertising, promotion, packaging, labeling, export, import, distribution, or sale, we may become subject to administrative or judicial sanctions or other legal consequences. These sanctions or consequences could include, among other things, the FDA's refusal to approve pending applications, issuance of clinical holds for ongoing studies, suspension or revocation of approved applications, warning or untitled letters, product withdrawals or recalls, product seizures, relabeling or repackaging, total or partial suspensions of manufacturing or distribution, injunctions, fines, civil penalties or criminal prosecution.

Our product candidates must be approved for therapeutic indications by the FDA before they may be marketed in the United States. For drug product candidates regulated under the FD&C Act, FDA must approve a New Drug Application, or NDA. For biologic product candidates regulated under the FD&C Act and PHSA, FDA must approve a Biologics License Application, or BLA. The process is similar and generally involves the following:

- completion of extensive preclinical studies in accordance with applicable regulations, including studies conducted in accordance with good laboratory practice, or GLP, requirements;
- completion of the manufacture, under current Good Manufacturing Practices, or cGMP, conditions, of the drug substance and drug product that the sponsor intends to use in human clinical trials along with required analytical and stability testing;
- submission to the FDA of an investigational new drug application, or IND, which must become effective before clinical trials may begin and must be updated annually and when certain changes are made;
- approval by an institutional review board, or IRB, or independent ethics committee at each clinical trial site before each trial may be initiated;
- performance of adequate and well-controlled clinical trials in accordance with applicable IND regulations, good clinical practice, or GCP, requirements and other clinical trial-related regulations to establish the safety and efficacy of the investigational product for each proposed indication;
- preparation and submission to the FDA of an NDA or BLA;
- a determination by the FDA within 60 days of its receipt of an NDA or BLA to file the application for review;
- satisfactory completion of one or more FDA pre-approval or pre-license inspections of the manufacturing facility or facilities where the drug will be produced to assess compliance with cGMP requirements to assure that the facilities, methods and controls are adequate to preserve the drug or biological product's identity, strength, quality and purity;

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- satisfactory completion of FDA audit of the clinical trial sites that generated the data in support of the NDA;
- payment of user fees for FDA review of the NDA or BLA; and
- FDA review and approval of the NDA or BLA, including, where applicable, consideration of the views of any FDA advisory committee, prior to any commercial marketing or sale of the drug in the United States.

### ***Preclinical studies and clinical trials for drugs and biologics***

Before testing any drug or biologic in humans, the product candidate must undergo rigorous preclinical testing. Preclinical studies include laboratory evaluations of product chemistry, formulation and stability, as well as *in vitro* and animal studies to assess safety and in some cases to establish the rationale for therapeutic use. The conduct of preclinical studies is subject to federal and state regulation and requirements, including GLP requirements for safety/toxicology studies. The results of the preclinical studies, together with manufacturing information and analytical data, must be submitted to the FDA as part of an IND.

An IND is a request for authorization from the FDA to administer an investigational product to humans and must become effective before clinical trials may begin. The central focus of an IND submission is on the general investigational plan and the protocol(s) for clinical studies. The IND also includes the results of animal and *in vitro* studies assessing the toxicology, pharmacokinetics, pharmacology, and pharmacodynamic characteristics of the product; chemistry, manufacturing, and controls information; and any available human data or literature to support the use of the investigational product. Some long-term preclinical testing may continue after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises concerns or questions about the conduct of the clinical trial, including concerns that human research subjects will be exposed to unreasonable health risks, and imposes a full or partial clinical hold. FDA must notify the sponsor of the grounds for the hold and any identified deficiencies must be resolved before the clinical trial can begin. Submission of an IND may result in the FDA not allowing clinical trials to commence or not allowing clinical trials to commence on the terms originally specified in the IND. A clinical hold can also be imposed once a trial has already begun, thereby halting the trial until the deficiencies articulated by FDA are corrected.

The clinical stage of development involves the administration of the product candidate to healthy volunteers or patients under the supervision of qualified investigators, who generally are physicians not employed by or under the trial sponsor's control, in accordance with GCP requirements, which include the requirements that all research subjects provide their informed consent for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria and the parameters and criteria to be used in monitoring safety and evaluating effectiveness. Each protocol, and any subsequent amendments to the protocol, must be submitted to the FDA as part of the IND. Furthermore, each clinical trial must be reviewed and approved by an IRB for each institution at which the clinical trial will be conducted to ensure that the risks to individuals participating in the clinical trials are minimized and are reasonable compared to the anticipated benefits. The IRB also approves the informed consent form that must be provided to each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed. The FDA, the IRB, or the sponsor may suspend or discontinue a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk. There also are requirements governing the reporting of ongoing clinical trials and completed clinical trials to public registries. Information about clinical trials, including results for clinical trials other than Phase 1 investigations, must be submitted within specific timeframes for publication on [www.ClinicalTrials.gov](http://www.ClinicalTrials.gov), a clinical trials database maintained by the National Institutes of Health.

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A sponsor who wishes to conduct a clinical trial outside of the United States may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. If a foreign clinical trial is not conducted under an IND, FDA will nevertheless accept the results of the study in support of an NDA if the study was conducted in accordance with GCP requirements, and the FDA is able to validate the data through an onsite inspection if deemed necessary.

Clinical trials to evaluate therapeutic indications to support NDAs for marketing approval are typically conducted in three sequential phases, which may overlap.

- *Phase 1*—Phase 1 clinical trials involve initial introduction of the investigational product in a limited population of healthy human volunteers or patients with the target disease or condition. These studies are typically designed to test the safety, dosage tolerance, absorption, metabolism and distribution of the investigational product in humans, excretion the side effects associated with increasing doses, and, if possible, to gain early evidence of effectiveness.
- *Phase 2*—Phase 2 clinical trials typically involve administration of the investigational product to a limited patient population with a specified disease or condition to evaluate the drug’s potential efficacy, to determine the optimal dosages and dosing schedule and to identify possible adverse side effects and safety risks.
- *Phase 3*—Phase 3 clinical trials typically involve administration of the investigational product to an expanded patient population to further evaluate dosage, to provide statistically significant evidence of clinical efficacy and to further test for safety, generally at multiple geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk/benefit ratio of the investigational product and to provide an adequate basis for product approval and physician labeling. Generally, two adequate and well-controlled Phase 3 trials are required by the FDA for approval of an NDA or BLA.

In August 2018, the FDA released a draft guidance entitled “Expansion Cohorts: Use in First-In-Human Clinical Trials to Expedite Development of Oncology Drugs and Biologics,” which outlines how drug developers can utilize an adaptive trial design commonly referred to as a seamless trial design in early stages of oncology drug development (i.e., the first-in-human clinical trial) to compress the traditional three phases of trials into one continuous trial called an expansion cohort trial. Information to support the design of individual expansion cohorts are included in IND applications and assessed by FDA. Expansion cohort trials can potentially bring efficiency to drug development and reduce development costs and time.

Post-approval trials, sometimes referred to as Phase 4 clinical trials or post-marketing studies, may be conducted after initial marketing approval. These trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication and are commonly intended to generate additional safety data regarding use of the product in a clinical setting. In certain instances, the FDA may mandate the performance of Phase 4 clinical trials as a condition of NDA or BLA approval.

Progress reports detailing the results of the clinical trials, among other information, must be submitted at least annually to the FDA. Written IND safety reports must be submitted to the FDA and the investigators fifteen days after the trial sponsor determines the information qualifies for reporting for serious and unexpected suspected adverse events, findings from other studies or animal or *in vitro* testing that suggest a significant risk for human volunteers and any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must also notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction as soon as possible but in no case later than seven calendar days after the sponsor’s initial receipt of the information.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the product candidate and finalize a process for manufacturing the drug product in commercial quantities in accordance with cGMP requirements.

The manufacturing process must be capable of consistently producing quality batches of the product candidate and manufacturers must develop, among other things, methods for testing the identity, strength, quality and purity of the final drug product. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

### ***U.S. marketing approval for drugs and biologics***

Assuming successful completion of the required clinical testing, the results of the preclinical studies and clinical trials, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA or BLA package requesting approval to market the product for one or more indications. An NDA is a request for approval to market a new drug for one or more specified indications and must contain proof of the drug's safety and efficacy for the requested indications. A BLA is a request for approval to market a new biologic for one or more specified indications and must contain proof of the biologic's safety, purity and potency for the requested indications. The marketing application is required to include both negative and ambiguous results of preclinical studies and clinical trials, as well as positive findings, together with detailed information relating to the product's chemistry, manufacturing, controls, and proposed labeling, among other things. Data may come from company-sponsored clinical trials intended to test the safety and efficacy of a product's use or from a number of alternative sources, including studies initiated by investigators. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety and efficacy of the investigational drug, or the safety, purity and potency of the investigational biologic, to the satisfaction of the FDA. FDA must approve an NDA or BLA before a drug or biologic may be marketed in the United States.

The FDA reviews all submitted NDAs and BLAs to ensure they are sufficiently complete to permit substantive review before it accepts them for filing and may request additional information rather than accepting the NDA or BLA for filing. The FDA must make a decision on accepting an NDA or BLA for filing within 60 days of receipt, and such decision could include a refusal to file by the FDA. Once the submission is accepted for filing, the FDA begins an in-depth substantive review of the NDA or BLA. The FDA reviews an NDA or BLA to determine, among other things, whether the product is safe and effective for the indications sought and whether the facility in which it is manufactured, processed, packaged or held meets standards designed, including cGMP requirements, designed to assure and preserve the product's continued identity, strength, quality and purity. Under the goals and polices agreed to by the FDA under the Prescription Drug User Fee Act, or PDUFA, the FDA targets ten months, from the filing date, in which to complete its initial review of a new molecular entity NDA or BLA and respond to the applicant, and six months from the filing date of a new molecular entity NDA or BLA for priority review. The FDA does not always meet its PDUFA goal dates for standard or priority NDAs or BLAs, and the review process is often extended by FDA requests for additional information or clarification.

Further, under PDUFA, as amended, each NDA or BLA must be accompanied by a substantial user fee. The FDA adjusts the PDUFA user fees on an annual basis. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a small business. Additionally, no user fees are assessed on NDAs or BLAs for products designated as orphan drugs, unless the product also includes a non-orphan indication.

The FDA also may require submission of a Risk Evaluation and Mitigation Strategy, or REMS, if it believes that a risk evaluation and mitigation strategy is necessary to ensure that the benefits of the drug outweigh its risks. A REMS can include use of risk evaluation and mitigation strategies like medication guides, physician communication plans, assessment plans, and/or elements to assure safe use, such as restricted distribution methods, patient registries, special monitoring or other risk-minimization tools.

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The FDA may refer an application for a novel drug or biologic to an advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, which reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving an NDA or BLA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and are adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA or BLA, the FDA may inspect one or more clinical trial sites to assure compliance with GCP and other requirements and the integrity of the clinical data submitted to the FDA.

After evaluating the NDA or BLA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a Complete Response Letter. A Complete Response Letter indicates that the review cycle of the application is complete and the application is not ready for approval. A Complete Response Letter generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA or BLA, except that where the FDA determines that the data supporting the application are inadequate to support approval, the FDA may issue the Complete Response Letter without first conducting required inspections, testing submitted product lots, and/or reviewing proposed labeling. In issuing the Complete Response Letter, the FDA may require additional clinical or preclinical testing or recommend other actions, such as requests for additional information or clarification, that the applicant might take in order for the FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications.

Even if the FDA approves a product, depending on the specific risk(s) to be addressed it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a product's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under a REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

### ***Orphan drug designation and exclusivity***

Under the Orphan Drug Act, the FDA may grant orphan drug designation to a drug or biologic intended to treat a rare disease or condition, which is a disease or condition with either a patient population of fewer than 200,000 individuals in the United States, or a patient population greater than 200,000 individuals in the United States when there is no reasonable expectation that the cost of developing and making the product available in the United States for the disease or condition will be recovered from sales of the product. Orphan drug designation must be requested before submitting an NDA or BLA. After the FDA grants orphan drug designation, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in or shorten the duration of the regulatory review and approval process, though companies developing orphan products are eligible for certain incentives, including tax credits for qualified clinical testing and waiver of application fees.



If a product that has orphan designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to a seven-year period of marketing exclusivity during which the FDA may not approve any other applications to market the same therapeutic agent for the same indication, except in limited circumstances, such as a subsequent product's showing of clinical superiority over the product with orphan exclusivity or where the original applicant cannot produce sufficient quantities of product. Competitors, however, may receive approval of different therapeutic agents for the indication for which the orphan product has exclusivity or obtain approval for the same therapeutic agent for a different indication than that for which the orphan product has exclusivity. Orphan product exclusivity could block the approval of one of our products for seven years if a competitor obtains approval for the same therapeutic agent for the same indication before we do, unless we are able to demonstrate that our product is clinically superior. If an orphan designated product receives marketing approval for an indication broader than what is designated, it may not be entitled to orphan exclusivity. Further, orphan drug exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or the manufacturer of the approved product is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

### ***Expedited development and review programs for drugs and biologics***

The FDA maintains several programs intended to facilitate and expedite development and review of new drugs and biologics to address unmet medical needs in the treatment of serious or life-threatening diseases or conditions. These programs include Fast Track designation, Breakthrough Therapy designation, Priority Review and Accelerated Approval, and the purpose of these programs is to either expedite the development or review of important new drugs and biologics to get them to patients more quickly than standard FDA review timelines typically permit.

A new drug or biologic is eligible for Fast Track designation if it is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address unmet medical needs for such disease or condition. Fast track designation applies to the combination of the product candidate and the specific indication for which it is being studied. Fast Track designation provides increased opportunities for sponsor interactions with the FDA during preclinical and clinical development, in addition to the potential for rolling review once a marketing application is filed. Rolling review means that the FDA may review portions of the marketing application before the sponsor submits the complete application.

In addition, a new drug or biologic may be eligible for Breakthrough Therapy designation if it is intended to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the drug or biologic, alone or in combination with one or more other drugs or biologics, may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Breakthrough Therapy designation provides all the features of Fast Track designation in addition to intensive guidance on an efficient product development program beginning as early as Phase 1, and FDA organizational commitment to expedited development, including involvement of senior managers and experienced review staff in a cross-disciplinary review, where appropriate.

Any product submitted to the FDA for approval, including a product with Fast Track or Breakthrough Therapy designation, may also be eligible for additional FDA programs intended to expedite the review and approval process, including Priority Review designation and Accelerated Approval. A product is eligible for Priority Review, once an NDA or BLA is submitted, if the product that is the subject of the marketing application has the potential to provide a significant improvement in safety or effectiveness in the treatment, diagnosis or prevention of a serious disease or condition. Under priority review, the FDA's goal date to take action on the marketing application is six months compared to ten months for a standard review. Products are eligible for Accelerated Approval if they can be shown to have an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or an effect on a clinical endpoint that can be measured earlier than an effect on irreversible

morbidity or mortality, which is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments.

Accelerated Approval is usually contingent on a sponsor's agreement to conduct, in a diligent manner, adequate and well-controlled additional post-approval confirmatory studies to verify and describe the product's clinical benefit. The FDA may withdraw approval of a drug or an indication approved under Accelerated Approval if, for example, the confirmatory trial fails to verify the predicted clinical benefit of the product. In addition, the FDA generally requires, as a condition for Accelerated Approval, that all advertising and promotional materials intended for dissemination or publication within 120 days of marketing approval be submitted to the agency for review during the pre-approval review period. After the 120-day period has passed, all advertising and promotional materials must be submitted at least 30 days prior to the intended time of initial dissemination or publication.

Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or the time period for FDA review or approval may not be shortened. Furthermore, Fast Track designation, Breakthrough Therapy designation, Priority Review and Accelerated Approval do not change the scientific or medical standards for approval or the quality of evidence necessary to support approval, though they may expedite the development or review process.

### ***Pediatric information and pediatric exclusivity***

Under the Pediatric Research Equity Act, or PREA, as amended, certain NDAs and BLAs and certain NDA and BLA supplements must contain data that can be used to assess the safety and efficacy of the product candidate for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of pediatric data or full or partial waivers. The FD&C Act requires that a sponsor who is planning to submit a marketing application for a product candidate that includes a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration submit an initial Pediatric Study Plan, or PSP, within 60 days of an end-of-Phase 2 meeting or, if there is no such meeting, as early as practicable before the initiation of the Phase 3 or Phase 2/3 study. The initial PSP must include an outline of the pediatric study or studies that the sponsor plans to conduct, including study objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information. The FDA and the sponsor must reach an agreement on the PSP. A sponsor can submit amendments to an agreed-upon initial PSP at any time if changes to the pediatric plan need to be considered based on data collected from preclinical studies, early phase clinical trials and/or other clinical development programs. Unless otherwise required by regulation, PREA does not apply to a drug or biologic for an indication for which orphan designation has been granted, except that PREA will apply to an original NDA or BLA for a new active ingredient that is orphan-designated if the drug or biologic is a molecularly targeted cancer product intended for the treatment of an adult cancer and is directed at a molecular target that FDA determines to be substantially relevant to the growth or progression of a pediatric cancer.

A drug can also obtain pediatric market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric study in accordance with an FDA-issued "Written Request" for such a study.

### ***U.S. post-approval requirements for drugs and biologics***

Drugs and biologics manufactured or distributed pursuant to FDA approvals are subject to continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, reporting of adverse experiences with the product, complying with promotion and

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advertising requirements, which include restrictions on promoting products for unapproved uses or patient populations (known as “off-label use”) and limitations on industry-sponsored scientific and educational activities. Although physicians may prescribe approved products for off-label uses, manufacturers may not market or promote such uses. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, including not only by company employees but also by agents of the company or those speaking on the company’s behalf, and a company that is found to have improperly promoted off-label uses may be subject to significant liability, including investigation by federal and state authorities. Failure to comply with these requirements can result in, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties, including liabilities under the False Claims Act where products are obtained reimbursement under federal health care programs. Promotional materials for approved drugs and biologics must be submitted to the FDA in conjunction with their first use or first publication. Further, if there are any modifications to the drug or biologic, including changes in indications, labeling or manufacturing processes or facilities, the applicant may be required to submit and obtain FDA approval of a new NDA or BLA or NDA or BLA supplement, which may require the development of additional data or preclinical studies and clinical trials.

The FDA may impose a number of post-approval requirements as a condition of approval of an NDA or BLA. For example, the FDA may require post-market testing, including Phase 4 clinical trials, and surveillance to further assess and monitor the product’s safety and effectiveness after commercialization. In addition, manufacturers and their subcontractors involved in the manufacture and distribution of approved drugs and biologics are required to register their establishments with the FDA and certain state agencies and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including cGMPs, which impose certain procedural and documentation requirements on sponsors and their CMOs. Changes to the manufacturing process are strictly regulated, and, depending on the significance of the change, may require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting requirements upon us and any third party manufacturers that a sponsor may use. Accordingly, manufacturers must continue to expend time money and effort in the area of production and quality control to maintain compliance with cGMP and other aspects of regulatory compliance. Failure to comply with statutory and regulatory requirements may subject a manufacturer to possible legal or regulatory action, such as warning letters, suspension of manufacturing, product seizures, injunctions, civil penalties or criminal prosecution. There is also a continuing, annual program user fee for any marketed product.

The FDA may withdraw approval of a product if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information, requirements for post-market studies or clinical trials to assess new safety risks, or imposition of distribution or other restrictions under a REMS. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- the issuance of safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings or other safety information about the product;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve applications or supplements to approved applications, or suspension or revocation of product approvals;
- product seizure or detention, or refusal to permit the import or export of products;
- injunctions or the imposition of civil or criminal penalties; and

- consent decrees, corporate integrity agreements, debarment or exclusion from federal healthcare programs; or mandated modification of promotional materials and labeling and issuance of corrective information.

### ***Regulation of companion diagnostics***

Companion diagnostics identify patients who are most likely to benefit from a particular therapeutic product; identify patients likely to be at increased risk for serious side effects as a result of treatment with a particular therapeutic product; or monitor response to treatment with a particular therapeutic product for the purpose of adjusting treatment to achieve improved safety or effectiveness. Companion diagnostics are regulated as medical devices by the FDA. In the United States, the FD&C Act, and its implementing regulations, and other federal and state statutes and regulations govern, among other things, medical device design and development, preclinical and clinical testing, premarket clearance or approval, registration and listing, manufacturing, labeling, storage, advertising and promotion, sales and distribution, export and import, and post-market surveillance. Unless an exemption or FDA exercise of enforcement discretion applies, diagnostic tests generally require marketing clearance or approval from the FDA prior to commercialization. The two primary types of FDA marketing authorization applicable to a medical device are clearance of a premarket notification, or 510(k), and approval of a premarket approval application, or PMA.

To obtain 510(k) clearance for a medical device, or for certain modifications to devices that have received 510(k) clearance, a manufacturer must submit a premarket notification demonstrating that the proposed device is substantially equivalent to a previously cleared 510(k) device or to a pre-amendment device that was in commercial distribution before May 28, 1976, or a predicate device, for which the FDA has not yet called for the submission of a PMA. In making a determination that the device is substantially equivalent to a predicate device, the FDA compares the proposed device to the predicate device and assesses whether the subject device is comparable to the predicate device with respect to intended use, technology, design and other features which could affect safety and effectiveness. If the FDA determines that the subject device is substantially equivalent to the predicate device, the subject device may be cleared for marketing. The 510(k) premarket notification pathway generally takes from three to twelve months from the date the application is completed, but can take significantly longer.

A PMA must be supported by valid scientific evidence, which typically requires extensive data, including technical, preclinical, clinical and manufacturing data, to demonstrate to the FDA's satisfaction the safety and effectiveness of the device. For diagnostic tests, a PMA typically includes data regarding analytical and clinical validation studies. As part of its review of the PMA, the FDA will conduct a pre-approval inspection of the manufacturing facility or facilities to ensure compliance with the quality system regulation, or QSR, which requires manufacturers to follow design, testing, control, documentation and other quality assurance procedures. The FDA's review of an initial PMA is required by statute to take between six to ten months, although the process typically takes longer, and may require several years to complete. If the FDA evaluations of both the PMA and the manufacturing facilities are favorable, the FDA will either issue an approval letter or an approvable letter, which usually contains a number of conditions that must be met in order to secure the final approval of the PMA. If the FDA's evaluation of the PMA or manufacturing facilities is not favorable, the FDA will deny the approval of the PMA or issue a not approvable letter. A not approvable letter will outline the deficiencies in the application and, where practical, will identify what is necessary to make the PMA approvable. Once granted, PMA approval may be withdrawn by the FDA if compliance with post-approval requirements, conditions of approval or other regulatory standards is not maintained or problems are identified following initial marketing.

On July 31, 2014, the FDA issued a final guidance document addressing the development and approval process for "In Vitro Companion Diagnostic Devices." According to the guidance document, for novel therapeutic products that depend on the use of a diagnostic test and where the diagnostic device could be essential for the safe and effective use of the corresponding therapeutic product, the companion diagnostic device should be developed and approved or cleared contemporaneously with the therapeutic, although the FDA recognizes that there may be cases when contemporaneous development may not be possible. However, in cases where a drug

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cannot be used safely or effectively without the companion diagnostic, the FDA's guidance indicates it will generally not approve the drug without the approval or clearance of the diagnostic device. The FDA also issued a draft guidance in July 2016 setting forth the principles for co-development of an in vitro companion diagnostic device with a therapeutic product. The draft guidance describes principles to guide the development and contemporaneous marketing authorization for the therapeutic product and its corresponding *in vitro* companion diagnostic.

Once cleared or approved, the companion diagnostic device must adhere to post-marketing requirements including the requirements of the FDA's QSR, adverse event reporting, recalls and corrections along with product marketing requirements and limitations. Like drug makers, companion diagnostic makers are subject to unannounced FDA inspections at any time during which the FDA will conduct an audit of the product(s) and the company's facilities for compliance with its authorities.

### **Other regulatory matters**

Manufacturing, sales, promotion and other activities of product candidates following product approval, where applicable, or commercialization are also subject to regulation by numerous regulatory authorities in the United States in addition to the FDA, which may include the Centers for Medicare & Medicaid Services, or CMS, other divisions of the U.S. Department of Health and Human Services, the Department of Justice, the Drug Enforcement Administration, the Consumer Product Safety Commission, the Federal Trade Commission, the Occupational Safety & Health Administration, the Environmental Protection Agency and state and local governments and governmental agencies.

### **Other healthcare laws**

Healthcare providers, physicians, and third-party payors will play a primary role in the recommendation and prescription of any products for which we obtain marketing approval. Our business operations and any current or future arrangements with third-party payors, healthcare providers and physicians may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we develop, market, sell and distribute any drugs for which we obtain marketing approval. In the United States, these laws include, without limitation, state and federal anti-kickback, false claims, physician transparency, and patient data privacy and security laws and regulations, including but not limited to those described below.

- The federal Anti-Kickback Statute prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, paying, receiving or providing any remuneration (including any kickback, bribe, or certain rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare and Medicaid. A person or entity need not have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it in order to have committed a violation. Violations are subject to civil and criminal fines and penalties for each violation, plus up to three times the remuneration involved, imprisonment, and exclusion from government healthcare programs. In addition, the government may assert that a claim that includes items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act.
- The federal civil and criminal false claims laws, including the civil False Claims Act, or FCA, prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment or approval that are false, fictitious or fraudulent; knowingly making, using, or causing to be made or used, a false statement or record material to a false or fraudulent claim or obligation to pay or transmit money or property to the federal government; or knowingly concealing or knowingly and improperly avoiding or decreasing an obligation to pay money to the federal government. Manufacturers can be held liable under the FCA even when they do not

submit claims directly to government payors if they are deemed to “cause” the submission of false or fraudulent claims. The FCA also permits a private individual acting as a “whistleblower” to bring actions on behalf of the federal government alleging violations of the FCA and to share in any monetary recovery. When an entity is determined to have violated the federal civil False Claims Act, the government may impose civil fines and penalties for each false claim, plus treble damages, and exclude the entity from participation in Medicare, Medicaid and other federal healthcare programs.

- The federal civil monetary penalties laws impose civil fines for, among other things, the offering or transfer or remuneration to a Medicare or state healthcare program beneficiary, if the person knows or should know it is likely to influence the beneficiary’s selection of a particular provider, practitioner, or supplier of services reimbursable by Medicare or a state health care program, unless an exception applies.
- The Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for knowingly and willfully executing a scheme, or attempting to execute a scheme, to defraud any healthcare benefit program, including private payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, or falsifying, concealing or covering up a material fact or making any materially false statements in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity may be found guilty of violating HIPAA without actual knowledge of the statute or specific intent to violate it.
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, impose, among other things, specified requirements on covered entities and their respective business associates relating to the privacy and security of individually identifiable health information including mandatory contractual terms and required implementation of technical safeguards of such information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates in some cases, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys’ fees and costs associated with pursuing federal civil actions.
- The Physician Payments Sunshine Act, enacted as part of the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively, the ACA, imposed new annual reporting requirements for certain manufacturers of drugs, devices, biologics, and medical supplies for which payment is available under Medicare, Medicaid, or the Children’s Health Insurance Program, for certain payments and “transfers of value” provided to physicians (currently defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Effective January 1, 2022, these reporting obligations will extend to include transfers of value made in the previous year to certain non-physician providers such as physician assistants and nurse practitioners.
- Federal consumer protection and unfair competition laws broadly regulate marketplace activities and activities that potentially harm consumers.
- Analogous state and foreign laws and regulations, including, but not limited to, state anti-kickback and false claims laws, may be broader in scope than the provisions described above and may apply regardless of payor. Some state laws require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and relevant federal government compliance guidance; require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers; restrict marketing practices or require disclosure of marketing expenditures and pricing information. State and foreign laws may govern the privacy and security of health information in some circumstances. These data privacy and security laws may differ from each other in significant ways and often are not pre-empted by HIPAA, which may complicate compliance efforts.

The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform, especially in light of the lack of applicable precedent and regulations. Federal and state enforcement bodies have recently increased their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other related governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, disgorgement, exclusion from government funded healthcare programs, such as Medicare and Medicaid, reputational harm, additional oversight and reporting obligations if we become subject to a corporate integrity agreement or similar settlement to resolve allegations of non-compliance with these laws and the curtailment or restructuring of our operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be subject to similar actions, penalties and sanctions. Ensuring business arrangements comply with applicable healthcare laws, as well as responding to possible investigations by government authorities, can be time- and resource-consuming and can divert a company's attention from its business.

### ***Insurance Coverage and Reimbursement***

In the United States and markets in other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Thus, even if a product candidate is approved, sales of the product will depend, in part, on the extent to which third-party payors, including government health programs in the United States such as Medicare and Medicaid, commercial health insurers and managed care organizations, provide coverage, and establish adequate reimbursement levels for, the product. In the United States, the principal decisions about reimbursement for new medicines are typically made by the Centers for Medicare & Medicaid Services, or CMS, an agency within the U.S. Department of Health and Human Services, or HHS. CMS decides whether and to what extent a new medicine will be covered and reimbursed under Medicare and private payors tend to follow CMS to a substantial degree. No uniform policy of coverage and reimbursement for drug products exists among third-party payors. Therefore, coverage and reimbursement for drug products can differ significantly from payor to payor. The process for determining whether a third-party payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. Third-party payors are increasingly challenging the prices charged, examining the medical necessity, reviewing the cost-effectiveness of medical products and services and imposing controls to manage costs. Third-party payors may limit coverage to specific products on an approved list, also known as a formulary, which might not include all of the approved products for a particular indication.

In order to secure coverage and reimbursement for any product that might be approved for sale, a company may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product, which will require additional expenditure above and beyond the costs required to obtain FDA or other comparable regulatory approvals. Additionally, companies may also need to provide discounts to purchasers, private health plans or government healthcare programs. Nonetheless, product candidates may not be considered medically necessary or cost effective. A decision by a third-party payor not to cover a product could reduce physician utilization once the product is approved and have a material adverse effect on sales, our operations and financial condition. Additionally, a third-party payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage and reimbursement for the product, and the level of coverage and reimbursement can differ significantly from payor to payor.

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The containment of healthcare costs has become a priority of federal, state and foreign governments, and the prices of products have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a company's revenue generated from the sale of any approved products. Coverage policies and third-party payor reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which a company or its collaborators receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

### ***Current and future healthcare reform legislation***

In the United States and certain foreign jurisdictions, there have been, and likely will continue to be, a number of legislative and regulatory changes and proposed changes regarding the healthcare system directed at broadening the availability of healthcare, improving the quality of healthcare, and containing or lowering the cost of healthcare. For example, in March 2010, the United States Congress enacted the ACA, which, among other things, includes changes to the coverage and payment for products under government health care programs. The ACA includes provisions of importance to our potential product candidates that:

- created an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic products, apportioned among these entities according to their market share in certain government healthcare programs;
- expanded eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;
- expanded manufacturers' rebate liability under the Medicaid Drug Rebate Program by increasing the minimum rebate for both branded and generic drugs and revising the definition of "average manufacturer price," or AMP, for calculating and reporting Medicaid drug rebates on outpatient prescription drug prices;
- addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;
- expanded the types of entities eligible for the 340B drug discount program;
- established the Medicare Part D coverage gap discount program by requiring manufacturers to provide point-of-sale-discounts off the negotiated price of applicable brand drugs to eligible beneficiaries during their coverage gap period as a condition for the manufacturers' outpatient drugs to be covered under Medicare Part D; and
- created a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

Since its enactment, there have been numerous judicial, administrative, executive, and legislative challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. For example, various portions of the ACA are currently facing legal and constitutional challenges in the United States Supreme Court. It is unclear how such litigation and other efforts to repeal and replace the ACA will impact the ACA and our business. Additionally, the Trump administration issued various Executive Orders which eliminated cost sharing subsidies and various provisions that would impose a fiscal burden on states or a cost, fee, tax, penalty or regulatory burden on individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices, and Congress has introduced several pieces of legislation aimed at significantly revising or repealing the ACA. It is unclear whether the ACA will be overturned, repealed, replaced, or further amended. We cannot predict what effect further changes to the ACA would have on our business.



Other legislative changes have been proposed and adopted in the United States since the Affordable Care Act was enacted. For example, in August 2011, the Budget Control Act of 2011, among other things, included aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030 unless additional Congressional action is taken. The Coronavirus Aid, Relief and Economic Security Act, or CARES Act, which was signed into law in March 2020 and is designed to provide financial support and resources to individuals and businesses affected by the COVID-19 pandemic, suspended these reductions from May 1, 2020 through December 31, 2020. In January 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, CMS may develop new payment and delivery models, including bundled payment models. In addition, recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their commercial products, which has resulted in several Congressional inquiries and proposed and enacted state and federal legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for pharmaceutical products. For example, at the federal level, the current administration's budget for fiscal year 2021 includes a \$135 billion allowance to support legislative proposals seeking to reduce drug prices, increase competition, lower out-of-pocket drug costs for patients, and increase patient access to lower-cost generic and biosimilar drugs. On March 10, 2020, the current administration sent "principles" for drug pricing to Congress, calling for legislation that would, among other things, cap Medicare Part D beneficiary out-of-pocket pharmacy expenses, provide an option to cap Medicare Part D beneficiary monthly out-of-pocket expenses, and place limits on pharmaceutical price increases. Additionally, the current administration released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase drug manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products, and reduce the out of pocket costs of drug products paid by consumers. HHS has already started the process of soliciting feedback on some of these measures and, at the same time, is immediately implementing others under its existing authority. For example, in May 2019, CMS issued a final rule to allow Medicare Advantage Plans the option of using step therapy, a type of prior authorization, for Part B drugs beginning January 1, 2020. This final rule codified CMS's policy change that was effective January 1, 2019. Although a number of these and other measures may require additional authorization to become effective, Congress and the current administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. Additionally, on October 1, 2020 the FDA published a final rule that allows for the importation of certain prescription drugs from Canada. Under the final rule, States and Indian Tribes, and in certain future circumstances pharmacists and wholesalers, may submit importation program proposals to the FDA for review and authorization. Since the issuance of the final rule, several industry groups have filed federal lawsuits challenging multiple aspects of the final rule, and authorities in Canada have passed rules designed to safeguard the Canadian drug supply from shortages. On September 25, 2020, CMS stated drugs imported by States under this rule will not be eligible for federal rebates under Section 1927 of the Social Security Act and manufacturers would not report these drugs for "best price" or Average Manufacturer Price purposes. Since these drugs are not considered covered outpatient drugs, CMS further stated it will not publish a National Average Drug Acquisition Cost for these drugs. Separately, the FDA also issued a final guidance document outlining a pathway for manufacturers to obtain an additional National Drug Code, or NDC, for an FDA-approved drug that was originally intended to be marketed in a foreign country and that was authorized for sale in that foreign country. The regulatory and market implications of the final rule and guidance are unknown at this time. Individual states in the United States have also increasingly passed legislation and implemented regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

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On November 20, 2020, CMS and the HHS Office of the Inspector General issued two final rules implementing changes to the Physician Self-Referral Law, or Stark Law, and the Anti-Kickback Statute. These new rules codify new value-based exceptions and safe harbors to the Stark Law and the Anti-Kickback Statute, as well as offer additional clarification in the form of updated definitions. We continue to analyze and monitor the potential impact of these new and amended exceptions and safe harbors.

On May 30, 2018, the Right to Try Act was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a drug manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act, but the manufacturer must develop an internal policy and respond to patient requests according to that policy.

Outside the United States, ensuring coverage and adequate payment for a product also involves challenges. Pricing of prescription pharmaceuticals is subject to government control in many countries. Pricing negotiations with government authorities can extend well beyond the receipt of regulatory approval for a product and may require a clinical trial that compares the cost-effectiveness of a product to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in commercialization.

In the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed upon. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular product candidate to currently available therapies or so-called health technology assessments, in order to obtain reimbursement or pricing approval. For example, the European Union provides options for its member states to restrict the range of products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. European Union member states may approve a specific price for a product or may instead adopt a system of direct or indirect controls on the profitability of the company placing the product on the market. Other member states allow companies to fix their own prices for products, but monitor and control prescription volumes and issue guidance to physicians to limit prescriptions. Recently, many countries in the European Union have increased the amount of discounts required on pharmaceuticals and these efforts could continue as countries attempt to manage healthcare expenditures, especially in light of the severe fiscal and debt crises experienced by many countries in the European Union. The downward pressure on healthcare costs in general, particularly prescription products, has become intense. As a result, increasingly high barriers are being erected to the entry of new products. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states, and parallel trade, i.e., arbitrage between low-priced and high-priced member states, can further reduce prices. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any products, if approved in those countries.

### ***Compliance with other federal and state laws or requirements; changing legal requirements***

If any products that we may develop are made available to authorized users of the Federal Supply Schedule of the General Services Administration, additional laws and requirements apply. Products must meet applicable child-resistant packaging requirements under the U.S. Poison Prevention Packaging Act. Manufacturing, labeling, packaging, distribution, sales, promotion and other activities also are potentially subject to federal and state consumer protection and unfair competition laws, among other requirements to which we may be subject.

The distribution of pharmaceutical products is subject to additional requirements and regulations, including extensive recordkeeping, licensing, storage and security requirements intended to prevent the unauthorized sale of pharmaceutical products.

The failure to comply with any of these laws or regulatory requirements may subject firms to legal or regulatory action. Depending on the circumstances, failure to meet applicable regulatory requirements can result in criminal prosecution, fines or other penalties, injunctions, exclusion from federal healthcare programs, requests for recall, seizure of products, total or partial suspension of production, denial or withdrawal of product approvals, relabeling or repackaging, or refusal to allow a firm to enter into supply contracts, including government contracts. Any claim or action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Prohibitions or restrictions on marketing, sales or withdrawal of future products marketed by us could materially affect our business in an adverse way.

Changes in regulations, statutes or the interpretation of existing regulations could impact our business in the future by requiring, for example: (i) changes to our manufacturing arrangements; (ii) additions or modifications to product labeling or packaging; (iii) the recall or discontinuation of our products; or (iv) additional recordkeeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business.

#### ***Other U.S. environmental, health and safety laws and regulations***

We may be subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. From time to time and in the future, our operations may involve the use of hazardous and flammable materials, including chemicals and biological materials, and may also produce hazardous waste products. Even if we contract with third parties for the disposal of these materials and waste products, we cannot completely eliminate the risk of contamination or injury resulting from these materials. In the event of contamination or injury resulting from the use or disposal of our hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

We maintain workers' compensation insurance to cover us for costs and expenses that we may incur due to injuries to our employees, but this insurance may not provide adequate coverage against potential liabilities. However, we do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. Current or future environmental laws and regulations may impair our research, development or production efforts. In addition, failure to comply with these laws and regulations may result in substantial fines, penalties or other sanctions.

#### ***Government regulation of drugs and biologics outside of the United States***

To market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy and governing, among other things, clinical trials, marketing authorization, manufacturing, commercial sales and distribution of our products. For instance, in the United Kingdom and the European Economic Area, or the EEA (comprised of the 27 EU Member States plus Iceland, Liechtenstein and Norway), medicinal products must be authorized for marketing by using either the centralized authorization procedure or national authorization procedures.

- *Centralized procedure*—The centralized procedure provides for the grant of a single marketing authorization by the European Commission that is valid throughout the EEA. Pursuant to Regulation (EC) No. 726/2004, the centralized procedure is compulsory for specific products, including for medicines produced by certain biotechnological processes, products designated as orphan medicinal products, advanced therapy products (gene therapy, somatic cell therapy and tissue engineered products) and products with a new active substance indicated for the treatment of certain diseases,

which includes products for the treatment of cancer. For medicines that do not fall within one of the mandatory categories, an applicant still has the option of submitting an application for a centralized marketing authorization to the European Medicines Agency, or EMA, as long as the medicine concerned contains a new active substance not yet authorized in the EEA, is a significant therapeutic, scientific or technical innovation, or if its authorization would be in the interest of public health in the EEA. If pursuing marketing authorization of a product candidate for a therapeutic indication under the centralized procedure, the EMA's Committee for Medicinal Products for Human Use, or CHMP, is responsible for conducting an initial assessment of whether a product meets the required quality, safety and efficacy requirements, and whether a product has a positive benefit/risk ratio. Under the centralized procedure the maximum timeframe for the evaluation of a marketing authorization application, or MAA, by the EMA is 210 days, excluding clock stops, when additional written or oral information is to be provided by the applicant in response to questions asked by the CHMP. Clock stops may extend the timeframe of evaluation of a MAA considerably beyond 210 days. Where the CHMP gives a positive opinion, it provides the opinion together with supporting documentation to the European Commission, who make the final decision to grant a marketing authorization, which is issued within 67 days of receipt of the EMA's recommendation. Accelerated assessment might be granted by the CHMP in exceptional cases, when a medicinal product is expected to be of major public health interest, particularly from the point of view of therapeutic innovation. The timeframe for the evaluation of a MAA under the accelerated assessment procedure is 150 days, excluding clock stops, but it is possible that the CHMP may revert to the standard time limit for the centralized procedure if it determines that the application is no longer appropriate to conduct an accelerated assessment.

- *National authorization procedures*—There are also two other possible routes to authorize products for therapeutic indications in several countries, which are available for products that fall outside the scope of the centralized procedure:
  - *Decentralized procedure*—Using the decentralized procedure, an applicant may apply for simultaneous authorization in more than one EEA Member State for a medicinal product that has not yet been authorized in any EEA Member State and that does not fall within the mandatory scope of the centralized procedure.
  - *Mutual recognition procedure*—In the mutual recognition procedure, a medicine is first authorized in one EEA Member State, in accordance with the national procedures of that country. Following this, additional marketing authorizations can be sought from other EEA Member States in a procedure whereby the countries concerned recognize the validity of the original, national marketing authorization.

In both cases, as with the centralized procedure, the competent authorities of the EEA Member States assess the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy before granting the marketing authorization.

In the EEA, new products for therapeutic indications that are authorized for marketing (i.e., innovator products) qualify for eight years of data exclusivity and an additional two years of market exclusivity upon marketing authorization. The data exclusivity period prevents generic or biosimilar applicants from referencing the preclinical and clinical trial data contained in the dossier of the innovator product when applying for a generic or biosimilar marketing authorization in the EEA during a period of eight years from the date on which the innovator product was first authorized in the EEA. The additional two-year period of market exclusivity period prevents a successful generic or biosimilar applicant from commercializing its product in the EEA until ten years have elapsed from the initial authorization of the reference product in the EU. The overall ten-year period can be extended to a maximum of eleven years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies. Even if a compound is considered to be a new chemical entity so that the innovator gains the prescribed period of data exclusivity, another company may market another version of the product if such

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company obtained marketing authorization based on a MAA with a complete independent data package of pharmaceutical tests, preclinical tests and clinical trials

The criteria for designating an “orphan medicinal product” in the EEA are similar in principle to those in the United States. Under Article 3 of Regulation (EC) 141/2000, in the EEA a medicinal product may be designated as orphan if it meets the following criteria (1) it is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition; and (2) either (a) such condition affects no more than five in 10,000 persons in the EEA when the application is made, or (b) it is unlikely that the product, without the benefits derived from orphan status, would generate sufficient return in the EEA to justify the investment needed for its development; and (3) there exists no satisfactory method of diagnosis, prevention or treatment of such condition, or if such a method exists, the product will be of significant benefit to those affected by the condition. Orphan medicinal products are eligible for financial incentives such as reduction of fees or fee waivers and are, upon grant of a marketing authorization, entitled to ten years of market exclusivity for the approved therapeutic indication. During this ten-year orphan market exclusivity period, no marketing authorization application shall be accepted, and no marketing authorization shall be granted for a similar medicinal product for the same indication, although similar, is safer, more effective or otherwise clinically superior than the authorized product; (ii) the marketing authorization holder of the authorized product consents to a second orphan medicinal product application; or (iii) the marketing authorization holder of the authorized product cannot supply enough orphan medicinal product. An orphan product can also obtain an additional two years of market exclusivity in the EU for pediatric studies. The ten-year market exclusivity may be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan designation, for example, if the product is sufficiently profitable not to justify maintenance of market exclusivity. The application for orphan drug designation must be submitted before the application for marketing authorization. The applicant will receive a fee reduction for the MAA if the orphan drug designation has been granted, but not if the designation is still pending at the time the marketing authorization is submitted. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

Similar to the United States, the various phases of non-clinical and clinical research in the European Union are subject to significant regulatory controls.

The Clinical Trials Directive 2001/20/EC, the Directive 2005/28/EC on GCP and the related national implementing provisions of the individual EU Member States govern the system for the approval of clinical trials in the European Union. Under this system, an applicant must obtain prior approval from the national competent authority, or NCA, of the EU Member States in which the clinical trial is to be conducted. Furthermore, the applicant may only start a clinical trial at a specific study site after the competent ethics committee, or EC, has issued a favorable opinion. The clinical trial application must be accompanied by, among other documents, an investigational medicinal product dossier (the Common Technical Document) with supporting information prescribed by Directive 2001/20/EC, Directive 2005/28/EC, and the provisions of the individual EU Member States’ legislation implementing the Clinical Trials Directive. Under the current regime (the EU Clinical Trials Directive 2001/20/EC and corresponding national laws) all suspected unexpected serious adverse reactions to the investigated drug that occur during the clinical trial have to be reported to the NCA and ECs of the Member State where they occurred.

In April 2014, the new Clinical Trials Regulation, (EU) No 536/2014 (Clinical Trials Regulation) was adopted. It is expected that the new Clinical Trials Regulation (EU) No 536/2014 will apply following confirmation of full functionality of the Clinical Trials Information System (CTIS), the centralized European Union portal and database for clinical trials foreseen by the regulation, through an independent audit. The regulation becomes applicable six months after the European Commission publishes notice of this confirmation. The Clinical Trials Regulation will be directly applicable in all the EU Member States, repealing the current Clinical Trials Directive 2001/20/EC. Conduct of all clinical trials performed in the European Union will continue to be bound by the Clinical Trials Directive and the Member States’ national implementing legislation until the new Clinical Trials Regulation becomes applicable. The extent to which ongoing clinical trials will be governed by the Clinical

Trials Regulation will depend on when the Clinical Trials Regulation becomes applicable and on the duration of the individual clinical trial. If a clinical trial continues for more than three years from the day on which the Clinical Trials Regulation becomes applicable the Clinical Trials Regulation will at that time begin to apply to the clinical trial. The new Clinical Trials Regulation aims to simplify and streamline the approval of clinical trials in the European Union. The main characteristics of the regulation include: a streamlined application procedure via a single-entry point, the “EU portal”; a single set of documents to be prepared and submitted for the application as well as simplified reporting procedures for clinical trial sponsors; and a harmonized procedure for the assessment of applications for clinical trials, which is divided in two parts. Part I is assessed by the competent authorities of all EU Member States in which an application for authorization of a clinical trial has been submitted (Member States concerned). Part II is assessed separately by each Member State concerned. Strict deadlines have been established for the assessment of clinical trial applications. The role of the relevant ethics committees in the assessment procedure will continue to be governed by the national law of the concerned EU Member State. However, overall related timelines will be defined by the Clinical Trials Regulation.

### ***Government regulation of data collection outside of the United States***

In the event we conduct clinical trials in the European Union, we will be subject to additional privacy restrictions. The collection and use of personal health data in the European Economic Area, or EEA (being the European Union plus Norway, Iceland, and Liechtenstein), is governed by the General Data Protection Regulation, or the GDPR, which became effective on May 25, 2018. The GDPR applies to the processing of personal data by any company established in the EEA and to companies established outside the EEA to the extent they process personal data in connection with the offering of goods or services to data subjects in the EEA or the monitoring of the behavior of data subjects in the EEA. The GDPR enhances data protection obligations for data controllers of personal data, including stringent requirements relating to the consent of data subjects, expanded disclosures about how personal data is used, enhanced requirements for securing personal data, requirements to conduct privacy impact assessments for “high risk” processing, limitations on retention of personal data, mandatory data breach notification and “privacy by design” requirements, and creates direct obligations on service providers acting as processors. The GDPR also imposes strict rules on the transfer of personal data outside of the EEA to countries that do not ensure an adequate level of protection, like the United States. Failure to comply with the requirements of the GDPR and the related national data protection laws of the European Union Member States and Norway, Iceland and Liechtenstein, which may deviate slightly from the GDPR, may result in fines of up to 4% of a company’s global revenue for the preceding financial year, or €20,000,000, whichever is greater. Moreover, the GDPR grants data subjects the right to claim material and non-material damages resulting from infringement of the GDPR. Given the breadth and depth of changes in data protection obligations, maintaining compliance with the GDPR will require significant time, resources and expense, and we may be required to put in place additional controls and processes ensuring compliance with the new data protection rules. There has been limited enforcement of the GDPR to date, particularly in biopharmaceutical development, so we face uncertainty as to the exact interpretation of the new requirements on any future trials and we may be unsuccessful in implementing all measures required by data protection authorities or courts in interpretation of the new law. Further, the United Kingdom’s decision to leave the European Union, means that it has in force its own legislation which is aligned with the GDPR, known as the Data Protection Act 2018. The requirements are similar except that the United Kingdom is now regarded as a “third country” for the purposes of transfers of personal data from the EEA. Transfers continue to flow freely from the UK to the EEA; however, as part of the agreement between the UK and the EU, the UK intends to obtain an adequacy decision from the European Commission to ensure personal data can continue to flow freely from the EU to the UK. The UK hopes to obtain this decision by the end of June 2021.

Data protection authority activity differs across the EU, with certain authorities applying their own agenda which shows there is uncertainty in the manner in which data protection authorities will seek to enforce compliance with GDPR. For example, it is not clear if the authorities will conduct random audits of companies doing business in the EU, or if the authorities will wait for complaints to be filed by individuals who claim their rights have been violated. Enforcement uncertainty and the costs associated with ensuring GDPR compliance are onerous and may adversely affect our business, financial condition, results of operations and prospects.

Should we utilize third party distributors, compliance with such foreign governmental regulations would generally be the responsibility of such distributors, who may be independent contractors over whom we have limited control.

### **Employees**

As of December 31, 2020, we had 29 full-time employees, of which 16 have M.D. or Ph.D. degrees. Within our workforce, 21 employees are engaged in research and development and eight are engaged in business development, finance, legal, and general management and administration. None of our employees are represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and additional employees. The principal purposes of our equity incentive plans are to attract, retain and motivate selected employees, consultants and directors through the granting of stock-based compensation awards.

### **Facilities**

Our corporate headquarters is located in Boston, Massachusetts, where we lease and occupy approximately 13,170 square feet of office and laboratory space, or the Boston Lease. The term of our Boston Lease expires on February 28, 2021. Additionally, we have entered into a lease to move our corporate headquarters and occupy approximately 20,752 square feet of office, laboratory and animal care space, or the New Lease. We expect the commencement date of the New Lease to be February 1, 2021 and the term is expected to expire on May 31, 2026.

We believe our existing facilities, including the facilities we expect to occupy under the New Lease, are sufficient for our needs for the foreseeable future. To meet the future needs of our business, we may lease additional or alternate space, and we believe suitable additional or alternative space will be available in the future on commercially reasonable terms.

### **Legal proceedings**

From time to time, we may become involved in litigation or other legal proceedings. We are not currently a party to any litigation or legal proceedings that, in the opinion of our management, are probable to have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on our business, financial condition, results of operations and prospects because of defense and settlement costs, diversion of management resources and other factors.

## MANAGEMENT

### Executives and directors

The following table sets forth the name, age and position of each of our executives and directors as of December 31, 2020.

<u>Name</u>	<u>Age</u>	<u>Position</u>
<b>Executive Officers:</b>		
Mark Manfredi, Ph.D.	50	President, Chief Executive Officer and Director
Douglas R. Carlson	42	Chief Financial Officer
Jeffrey Ecsedy, Ph.D.	51	Chief Scientific Officer
Sergio Santillana, M.D., M.Sc., MBA	58	Chief Medical Officer
Maude Tessier, Ph.D.	43	Chief Business Officer
<b>Non-Employee Directors:</b>		
Ronald C. Renaud, Jr. <sup>(1)(2)</sup>	51	Chairman and Director
David Bonita, M.D.	45	Director
Iain D. Dukes, D.Phil.	62	Director
Jean-François Formela, M.D. <sup>(1)</sup>	64	Director
Otello Stampacchia, Ph.D.	51	Director

- (1) Member of the Audit Committee
- (2) Member of the Compensation Committee
- (3) Member of the Nominating and Corporate Governance Committee

Each executive officer serves at the discretion of our board of directors and holds office until his or her successor is duly elected and qualified or until his or her earlier resignation or removal. There are no family relationships among any of our directors or executive officers.

### Executive Officers

**Mark Manfredi, Ph.D.** is a founding member of Ikena Oncology and has served as our President and Chief Executive Officer, and as a member of our board of directors since December 2017. Previously, Dr. Manfredi served as our Chief Scientific Officer from March 2016 until December 2017. Prior to that, from April 2015 to September 2017, Dr. Manfredi was an in-house oncology expert at Atlas Venture, a company that has founded multiple biotechnology companies and Dr. Manfredi currently serves as an advisor to Atlas Venture. Concurrently, from April 2015 to April 2016, Dr. Manfredi was the Chief Scientific Officer of Raze Therapeutics, Inc., a biotechnology company focused on oncology therapeutics that target key metabolic pathways. He also previously held roles of increasing responsibility at Millennium Pharmaceuticals, Inc., as well as its parent company, Takeda Pharmaceutical Company from April 2001 to April 2015. Dr. Manfredi holds a Bachelor of Science in Zoology from the University of Rhode Island, and a Doctorate of Philosophy from Boston College. We believe that Dr. Manfredi is qualified to serve as our President and Chief Executive Officer and as a member of our board of directors because of his significant scientific and industry knowledge, as well as valuable experience gained from prior service as President and Chief Executive Officer.

**Douglas R. Carlson** has served as our Chief Financial Officer since January 2019. Prior to this, from March 2013 to January 2019, he held roles of increasing responsibility at Collegium Pharmaceutical, Inc. (NASDAQ: COLL), or Collegium, a publicly-traded, specialty pharmaceutical company, including Vice President, Corporate and Business Development and Vice President, Commercial Operations, Corporate Strategy & Business Development. Prior to joining Collegium, Mr. Carlson was Senior Director of Business Development at BTG International, Inc. (LSE: BTG), or BTG, a publicly-traded, international specialist healthcare company, where he was responsible for global specialty pharmaceutical M&A and licensing, from August 2011 to March 2013. Prior to BTG, Mr. Carlson was Senior Director and Head of Business Development for Lundbeck Inc., or Lundbeck,



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the U.S. Headquarters of H. Lundbeck A/S, from December 2009 to August 2011. Prior to Lundbeck, Mr. Carlson was Director of Corporate Development and M&A at Ovation Pharmaceuticals, Inc., or Ovation, where he played an integral role in the sale of Ovation to H. Lundbeck A/S in March 2009. Prior to Ovation, Mr. Carlson was an Associate in the healthcare group at Pequot Ventures, the venture capital arm of Pequot Capital Management, Inc. Mr. Carlson began his career in the healthcare investment banking group of Cowen. Mr. Carlson graduated from Trinity College in Hartford, Connecticut with a B.A. in American Studies in 2001. We believe that Mr. Carlson is qualified to serve as our Chief Financial Officer because of his extensive experience in the pharmaceutical industry, including his prior service in senior management roles with both private and public companies.

**Jeffrey Ecsedy, Ph.D.** has served as our Chief Scientific Officer since March 2019. Prior to this, he served as our Senior Vice President of Research and Development from October 2017 to February 2019. Previously, from June 2013 to October 2017, Dr. Ecsedy served as the Senior Director and Head of Oncology Translational Medicine at Takeda Pharmaceuticals Company Limited. Dr. Ecsedy holds a Bachelor of Science in Biological Sciences from the University of Connecticut and a Doctorate of Philosophy from Boston College. We believe that Dr. Ecsedy is qualified to serve as our Chief Scientific Officer because of his significant scientific and industry knowledge, and his prior service in senior management roles.

**Sergio Santillana, M.D., M.Sc., MBA** has served as our Chief Medical Officer since July 2020. Prior to this, he served as Senior Clinical Consultant for Ikena from September 2019 to June 2020. Dr. Santillana is also founder and President of his own oncology consulting firm, SLSS Consulting LLC, where he provides strategic consultancy services since April 2019. From June 2017 to April 2019 Dr. Santillana served as Senior Vice President and Chief Medical Officer at Merrimack Pharmaceuticals, Inc., a company focused on developing biologics and nanotherapeutics for solid tumors. Before joining Merrimack Pharmaceuticals, Inc., from March 2016 to June 2017, he was Head of Clinical Research and then Chief Medical Officer for ARIAD Pharmaceuticals, a commercial-stage biotechnology company focused on developing targeted therapies for cancer, that was acquired by Takeda Pharmaceutical Company. From August 2014 to March 2016, Dr. Santillana served as the Senior Medical Director of Oncology and Clinical Research at Takeda Pharmaceuticals International Limited, where he was the Global Clinical Lead of early development programs. Prior to joining Takeda Oncology, he served in various oncology clinical development roles at GlaxoSmithKline and Eli Lilly Oncology. Before joining the biopharmaceutical industry, Dr. Santillana was a practicing medical oncologist for more than a decade. Dr. Santillana holds a Bachelor of Science, Medical Degree (MD) and specialty/residence in Medical Oncology from the Universidad Nacional Federico Villarreal, a Master of Science from Kellogg College at Oxford University, and Master of Business Administration from Sloan School of Management at the Massachusetts Institute of Technology. We believe that Dr. Santillana is qualified to serve as our Chief Medical Officer because of his executive experience in the life sciences industry and his extensive medical knowledge.

**Maude Tessier, Ph.D.** has served as our Chief Business Officer since December 2019. Prior to this, she served as our Vice President of Business Development and Corporate Strategy from July 2018 to December 2019. Prior to that, from September 2014 until July 2018, Dr. Tessier held roles of increasing responsibility at Merck & Co., including Executive Director of Business Development & Licensing, and Director, Business Development & Licensing for oncology partnering. Prior to joining Merck & Co., from June 2008 until September 2014, Dr. Tessier held roles of increasing responsibility at Boston Children's Hospital, including Assistant Director of Business Development and Strategic Initiatives. In this role, she forged discovery alliances with industry partners and also built and managed the Marketing & Communications team. Maude began her business development career at Xanthus Pharmaceuticals, a small venture-backed oncology biotech company in Cambridge, Mass., where she had key roles in Business Development and Program Management of a Phase 3 asset leading to its eventual FDA approval. Dr. Tessier holds a Bachelor of Science in Biochemistry from McGill University and a Doctorate in Medical Biophysics from the University of Toronto. We believe that Dr. Tessier is qualified to serve as our Chief Business Officer because of her extensive industry knowledge and experience.

**Non-employee directors**

**Ronald C. Renaud, Jr.** has served as Chairman of our board of directors and as a member of our audit and compensation committees since March 2018. Since November 2014, Mr. Renaud has served as President and Chief Executive Officer and as a member of the board of directors of Translate Bio, Inc. (Nasdaq: TBIO). Mr. Renaud currently serves as a member of the board of directors of Atara Biotherapeutics, Inc. (Nasdaq: ATRA) and Axial Biotherapeutics, Inc. Formerly, Mr. Renaud served as President and Chief Executive Officer of Idenix Pharmaceuticals, Inc., a biopharmaceutical company, from October 2010 until Idenix was acquired by Merck & Co., a pharmaceutical company, in August 2014. He was previously Chief Financial Officer and Chief Business Officer of Idenix Pharmaceuticals, Inc. from May 2007 until October 2010. Mr. Renaud has also previously served as a member of the boards of directors of Akebia Therapeutics, Inc. (Nasdaq: AKBA), PTC Therapeutics, Inc. (Nasdaq: PTCT), and Chimerix, Inc. (Nasdaq: CMRX). Mr. Renaud received a Bachelor of Arts from St. Anselm College and a Master of Business Administration from the Marshall School of Business at the University of Southern California. We believe that Mr. Renaud is qualified to serve on our board of directors because of his executive experience, his service on the boards of other private and public life sciences companies and his extensive knowledge of the life sciences industry.

**David Bonita, M.D.** has served as a member of our board of directors since March 2016. Dr. Bonita is a member of OrbiMed Advisors LLC, an investment firm. Dr. Bonita currently serves on the boards of directors of Acutus Medical Inc. (Nasdaq: AFIB), IMARA Inc. (Nasdaq: IMRA), Prelude Therapeutics, Inc. (Nasdaq: PRLD), Repare Therapeutics Inc. (Nasdaq: RPTX), and Tricida, Inc. (Nasdaq: TCDA), as well as several private companies. Dr. Bonita also previously served on the boards of directors of Clementia Pharmaceuticals Inc., Loxo Oncology, Inc., SI-BONE, Inc., and ViewRay Inc. Prior to OrbiMed, Dr. Bonita worked as a corporate finance analyst in the healthcare investment banking groups of Morgan Stanley and UBS. He has published scientific articles in peer-reviewed journals based on signal transduction research performed at Harvard Medical School. He received his B.A. in biology from Harvard University and his joint M.D./M.B.A. from Columbia University. We believe that Dr. Bonita is qualified to serve on our board of directors based on his roles on several public and private boards of directors as well as his extensive experience in investing in healthcare companies.

**Iain D. Dukes, D.Phil.** has served as a member of our board of directors since November 2016. Dr. Dukes is a Venture Partner at OrbiMed Advisors LLC, which he joined in August 2016. Dr. Dukes has served as the Chief Executive Officer of Viriom Inc. since February 2019 and has also served as the Executive Chairman of Angiex Inc. since February 2020. In June 2018, Dr. Dukes co-founded Theseus Pharmaceuticals, Inc. and currently serves as the Chief Executive Officer. In September 2017, Dr. Dukes co-founded Kartos Therapeutics, Inc. and currently serves as President. Dr. Dukes previously served as Senior Vice President and Head of Business Development and Licensing for Merck Research Laboratories from August 2013 through May 2016. Prior to joining Merck, Dr. Dukes was Vice President of External Research & Development at Amgen, Inc. from August 2010 to August 2013. From October 2017 to July 2020, Dr. Dukes was a board member and Chairman of KaNDy Therapeutics, which was acquired by Bayer AG in September 2020. From January 2020 to June 2020, Dr. Dukes served as supervisory board member of Themis BioScience GmbH, until it was acquired by Merck & Co. Dr. Dukes also co-founded Telios Pharmaceuticals, Inc., where he serves as President. Dr. Dukes currently serves on the boards of directors of NeRRe Therapeutics, ReViral Limited, and ENYO Therapeutics. Since August 2016, Dr. Dukes has also served as chairman of the board of directors of Iovance Biotherapeutics Inc. (Nasdaq: IOVA). Dr. Dukes holds Master of Jurisprudence and Doctor of Philosophy degrees from the University of Oxford, a Master of Science degree in Cardiovascular Studies from the University of Leeds and a Bachelor of Science degree in Pharmacology from the University of Bath. We believe that Dr. Dukes is qualified to serve as a member of our board of directors because of his extensive experience in the pharmaceutical industry, including his service in senior management roles.

**Jean-François Formela, M.D.** has served as a member of our board of directors and as a member of our audit committee since March 2016. Dr. Formela is currently a Partner at Atlas Venture and focuses on novel drug discovery approaches and therapeutics. Dr. Formela joined Atlas Venture in 1993 to build the U.S. life sciences

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franchise. Dr. Formela is a director and co-founder of IFM Therapeutics, Inc., Intellia Therapeutics, Inc. (Nasdaq: NTLA), Korro Bio, Inc., Triplet Therapeutics, Inc. and Translate Bio, Inc. (Nasdaq: TBIO). Dr. Formela also serves on the board of Spero Therapeutics, Inc. (Nasdaq: SPRO). Dr. Formela is a member of the Partners Healthcare Innovation Growth Board and a former trustee of the Boston Institute of Contemporary Art. Dr. Formela received his Doctor of Medicine from Paris University School of Medicine and his Master of Business Administration from Columbia University. We believe Dr. Formela's experience in the life sciences industry, as well as his practice of medicine, provides him with the qualifications and skills to serve as a director of our Company

**Otello Stampacchia, Ph.D.** has served as a member of our board of directors since December 2020. Dr. Stampacchia is founder, Managing Director, and member of the investment committee at Omega Funds. Dr. Stampacchia currently serves on the board of directors of Kronos Bio, Inc. (Nasdaq: KRON), Morphic Holding, Inc. (Nasdaq: MORF), and Replimune Group, Inc. (Nasdaq: REPL), and private companies: Amunix Pharmaceuticals, Inc. and Scorpion Therapeutics, Inc. Prior to founding Omega in January 2004, Dr. Stampacchia was a Partner at AlpInvest Partners (now part of The Carlyle Group). Before AlpInvest Partners, he was the portfolio manager of the Lombard Odier Immunology Fund, an investment vehicle in Geneva, Switzerland, investing in public and private healthcare companies worldwide. Previously, Dr. Stampacchia was a member of the HealthCare corporate finance and M&A team at Goldman Sachs. Before Goldman, he helped co-found the healthcare investment activities at Index Securities (now Index Ventures). Dr. Stampacchia received a Masters of Science in Plant Genetics from the University of Pavia, a Masters of Science in Molecular Biology and a Doctorate of Philosophy in Molecular Biology from the University of Geneva and a Doctorate of Philosophy in Biotechnology from European Union Strasbourg. We believe Dr. Stampacchia is qualified to serve on our board of directors because of his venture capital experience in the life sciences industry and his service on the boards of other public and private life sciences companies.

### **Composition of our board of directors**

Our board consists of six members, each of whom are members pursuant to the board composition provisions of our certificate of incorporation and agreements with our stockholders, and is chaired by Mr. Renaud. These board composition provisions will terminate upon the completion of this offering. Upon the termination of these provisions, there will be no further contractual obligations regarding the election of our directors. Our nominating and corporate governance committee and our board of directors may therefore consider a broad range of factors relating to the qualifications and background of nominees. Our nominating and corporate governance committee's and our board of directors' priority in selecting board members is identification of persons who will further the interests of our stockholders through their established record of professional accomplishment, the ability to contribute positively to the collaborative culture among board members, knowledge of our business, understanding of the competitive landscape, professional and personal experiences, and expertise relevant to our growth strategy. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal. Our fifth amended and restated certificate of incorporation that will become effective upon the closing of this offering and amended and restated bylaws that will become effective upon the effectiveness of the registration statement of which this prospectus is a part, also provide that our directors may be removed only for cause by the affirmative vote of the holders of at least two-thirds of the votes that all our stockholders would be entitled to cast in an annual election of directors, and that any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office.

### **Director independence**

We intend to apply to list our common stock on The Nasdaq Global Market. Under the Nasdaq listing rules, independent directors must comprise a majority of a listed company's board of directors within twelve months from the date of listing. In addition, the Nasdaq listing rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and governance committees be independent

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within twelve months from the date of listing. Audit committee members must also satisfy additional independence criteria, including those set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and compensation committee members must also satisfy the independence criteria set forth in Rule 10C-1 under the Exchange Act. Under Nasdaq listing rules, a director will only qualify as an “independent director” if, in the opinion of that company’s board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3 under the Exchange Act, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee: (1) accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries, other than compensation for board service; or (2) be an affiliated person of the listed company or any of its subsidiaries. In order to be considered independent for purposes of Rule 10C-1, the board of directors must consider, for each member of a compensation committee of a listed company, all factors specifically relevant to determining whether a director has a relationship to such company which is material to that director’s ability to be independent from management in connection with the duties of a compensation committee member, including, but not limited to: the source of compensation of the director, including any consulting advisory or other compensatory fee paid by such company to the director, and whether the director is affiliated with the company or any of its subsidiaries or affiliates.

Our board of directors has determined that all members of the board of directors, except Mark Manfredi, Ph.D., are independent directors, including for purposes of the rules of The Nasdaq Global Market and the SEC. In making such independence determinations, our board of directors considered the relationships that each non-employee director has with us and all other facts and circumstances that our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director. In considering the independence of the directors listed above, our board of directors considered the association of our directors with the holders of more than 5% of our common stock. Upon the completion of this offering, we expect that the composition and functioning of our board of directors and each of our committees will comply with all applicable requirements of The Nasdaq Global Market and the rules and regulations of the SEC. There are no family relationships among any of our directors or executive officers. Dr. Manfredi is not an independent director under these rules because he is our President and Chief Executive Officer.

### ***Staggered board***

In accordance with the terms of our fifth amended and restated certificate of incorporation that will become effective upon the closing of this offering and amended and restated bylaws that will become effective upon the effectiveness of the registration statement of which this prospectus is a part, our board of directors will be divided into three staggered classes of directors and each will be assigned to one of the three classes. At each annual meeting of the stockholders, a class of directors will be elected for a three-year term to succeed the directors of the same class whose terms are then expiring. The terms of the directors will expire upon the election and qualification of successor directors at the annual meeting of stockholders to be held during the years 2022 for Class I directors, 2023 for Class II directors and 2024 for Class III directors.

- Our Class I directors will be \_\_\_\_\_ ;
- Our Class II directors will be \_\_\_\_\_ ; and
- Our Class III directors will be \_\_\_\_\_ .

Our fifth amended and restated certificate of incorporation that will become effective upon the closing of this offering and amended and restated by-laws that will become effective upon the effectiveness of the registration statement of which this prospectus is a part provide that the number of our directors shall be fixed from time to time by a resolution of the majority of our board of directors.

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The division of our board of directors into three classes with staggered three-year terms may delay or prevent stockholder efforts to effect a change of our management or a change in control.

### **Board leadership structure and board's role in risk oversight**

Currently, the role of chairman of our board of directors is separated from the role of Chief Executive Officer. Our Chief Executive Officer is responsible for recommending strategic decisions and capital allocation to the board of directors and to ensure the execution of the recommended plans. The chairman of our board of directors is responsible for leading the board of directors in its fundamental role of providing advice to and independent oversight of management. Our board of directors recognizes the time, effort, and energy that the Chief Executive Officer is required to devote to his position in the current business environment, as well as the commitment required to serve as our chairman, particularly as the board of directors' oversight responsibilities continue to grow. While our amended and restated by-laws and corporate governance guidelines will not require that our chairman and Chief Executive Officer positions be separate, our board of directors believes that having separate positions is the appropriate leadership structure for us at this time and demonstrates our commitment to good corporate governance.

Risk is inherent with every business, and how well a business manages risk can ultimately determine its success. We face a number of risks, including the four risks more fully discussed in the section entitled "Business" appearing elsewhere in this prospectus. Management is responsible for the day-to-day management of risks we face, while our board of directors, as a whole and through its committees, has responsibility for the oversight of risk management. In its risk oversight role, our board of directors has the responsibility to satisfy itself that the risk management processes designed and implemented by management are adequate and functioning as designed.

The role of the board of directors in overseeing the management of our risks is conducted primarily through committees of the board of directors, as disclosed in the descriptions of each of the committees below and in the charters of each of the committees. The full board of directors (or the appropriate board committee in the case of risks that are under the purview of a particular committee) discusses with management our major risk exposures, their potential impact on us, and the steps we take to manage them. When a board committee is responsible for evaluating and overseeing the management of a particular risk or risks, the chairman of the relevant committee reports on the discussion to the full board of directors during the committee reports portion of the next board meeting. This enables the board of directors and its committees to coordinate the risk oversight role, particularly with respect to risk interrelationships.

### **Committees of our board of directors**

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee, each of which will operate pursuant to a charter to be adopted by our board of directors and will be effective upon the effectiveness of the registration statement of which this prospectus is a part. The board of directors may also establish other committees from time to time to assist us and our board of directors. Upon the effectiveness of the registration statement of which this prospectus is a part, the composition and functioning of all of our committees will comply with all applicable requirements of the Sarbanes-Oxley Act of 2002, Nasdaq and SEC rules and regulations, if applicable. Upon our listing on The Nasdaq Global Market, each committee's charter will be available on our website at [www.ikenaoncology.com](http://www.ikenaoncology.com). The reference to our website address does not constitute incorporation by reference of the information contained at or available through our website, and you should not consider it to be part of this prospectus.

#### ***Audit committee***

serve on the audit committee, which is chaired by . Our board of directors has determined that each are "independent" for audit committee purposes as that term is defined by the rules of the SEC and Nasdaq, and that each has sufficient knowledge in financial and auditing matters to serve on the audit committee.

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Our board of directors has determined that \_\_\_\_\_ qualifies as an “audit committee financial expert,” as defined under the applicable rules of the SEC. The audit committee’s responsibilities include:

- appointing, approving the compensation of, and assessing the independence of, our independent registered public accounting firm;
- pre-approving auditing and permissible non-audit services, and the terms of such services, to be provided by our independent registered public accounting firm;
- reviewing the overall audit plan with our independent registered public accounting firm and members of management responsible for preparing our financial statements;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures as well as critical accounting policies and practices used by us;
- coordinating the oversight and reviewing the adequacy of our internal control over financial reporting;
- establishing policies and procedures for the receipt and retention of accounting-related complaints and concerns;
- recommending, based upon the audit committee’s review and discussions with management and our independent registered public accounting firm, whether our audited financial statements shall be included in our Annual Report on Form 10-K;
- monitoring the integrity of our financial statements and our compliance with legal and regulatory requirements as they relate to our financial statements and accounting matters;
- preparing the audit committee report required by SEC rules to be included in our annual proxy statement;
- reviewing all related person transactions for potential conflict of interest situations and approving all such transactions; and
- reviewing quarterly earnings releases.

### ***Compensation committee***

\_\_\_\_\_ serve on the compensation committee, which is chaired by \_\_\_\_\_. Our board of directors has determined that each member of the compensation committee is “independent” as defined in the applicable Nasdaq rules. The compensation committee’s responsibilities include:

- annually reviewing and recommending to the board of directors the corporate goals and objectives relevant to the compensation of our Chief Executive Officer;
- evaluating the performance of our Chief Executive Officer in light of such corporate goals and objectives and, based on such evaluation, recommending to the board of directors the cash compensation of our Chief Executive Officer;
- determining the cash compensation of our other executive officers;
- overseeing and administering our compensation and similar plans;
- reviewing and approving the retention or termination of any consulting firm or outside advisor to assist in the evaluation of compensation matters and evaluating and assessing potential and current compensation advisors in accordance with the independence standards identified in the applicable Nasdaq rules;
- retaining and approving the compensation of any compensation advisors;
- reviewing and approving the grant of equity-based awards;

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- reviewing and recommending to the board of directors the compensation of our directors; and
- preparing the compensation committee report required by SEC rules, if and when required, to be included in our annual proxy statement.

Each member of our compensation committee is a non-employee director, as defined in Rule 16b-3 promulgated under the Exchange act, and an outside director, as defined pursuant to Section 162(m) of the Internal Revenue Code of 1986, as amended, or the Code.

### ***Nominating and corporate governance committee***

Upon the effectiveness of the registration statement of which this prospectus forms a part, \_\_\_\_\_ will serve on the nominating and corporate governance committee, which will be chaired by \_\_\_\_\_. Our board of directors has determined that a majority of the nominating and corporate governance committee is “independent” as defined in the applicable Nasdaq rules. The nominating and corporate governance committee’s responsibilities include:

- developing and recommending to the board of directors criteria for board and committee membership;
- establishing procedures for identifying and evaluating board of director candidates, including nominees recommended by stockholders;
- reviewing the composition of the board of directors to ensure that it is composed of members containing the appropriate skills and expertise to advise us;
- identifying individuals qualified to become members of the board of directors;
- recommending to the board of directors the persons to be nominated for election as directors and to each of the board’s committees;
- reviewing and recommending to the board of directors appropriate corporate governance guidelines; and
- overseeing the evaluation of our board of directors.

Our board of directors may from time to time establish other committees.

### **Compensation committee interlocks and insider participation**

In 2020, the compensation committee consisted of \_\_\_\_\_. None of the members of our compensation committee has at any time during the prior three years been one of our officers or employees. None of our executive officers currently serves, or in the past fiscal year has served, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving on our board of directors or compensation committee.

### **Code of Business Conduct and Ethics**

Our board of directors will adopt a Code of Business Conduct and Ethics in connection with this offering. The Code of Business Conduct and Ethics will apply to our directors, officers, and employees, including our principal executive officer, principal financial officer, principal accounting officer, or controller, or persons performing similar functions. Upon the completion of this offering, the full text of our Code of Business Conduct and Ethics will be posted on our website at [www.ikenaoncology.com](http://www.ikenaoncology.com). The information on our website is deemed not to be incorporated in this prospectus or to be a part of this prospectus. If we make any substantive amendments to, or grant any waivers from, our Code of Business Conduct and Ethics for any officer or director, we will disclose the nature of such amendment or waiver on our website or in a current report on Form 8-K.

### **Limitations on Liability and Indemnification Agreements**

As permitted by Delaware law, provisions in our fifth amended and restated certificate of incorporation, which will become effective immediately prior to the closing of this offering, and amended and restated bylaws, which will become effective upon the effectiveness of this registration statement, limit or eliminate the personal liability of directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, a director exercise an informed business judgment based on all material information reasonably available to him or her. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any act related to unlawful stock repurchases, redemptions or other distributions or payments of dividends; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not limit or eliminate our rights or any stockholder's rights to seek non-monetary relief, such as injunctive relief or rescission. These provisions will not alter a director's liability under other laws, such as the federal securities laws or other state or federal laws. Our fifth amended and restated certificate of incorporation that will become effective immediately prior to the closing of this offering also authorizes us to indemnify our officers, directors and other agents to the fullest extent permitted under Delaware law.

As permitted by Delaware law, our amended and restated bylaws to be effective upon the effectiveness of this registration statement will provide that:

- we will indemnify our directors, officers, employees and other agents to the fullest extent permitted by law;
- we must advance expenses to our directors and officers, and may advance expenses to our employees and other agents, in connection with a legal proceeding to the fullest extent permitted by law; and
- the rights provided in our amended and restated bylaws are not exclusive.

If Delaware law is amended to authorize corporate action further eliminating or limiting the personal liability of a director or officer, then the liability of our directors or officers will be so eliminated or limited to the fullest extent permitted by Delaware law, as so amended. Our amended and restated bylaws will also permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in connection with their services to us, regardless of whether our bylaws permit such indemnification. We have obtained such insurance.

In addition to the indemnification that will be provided for in our fifth amended and restated certificate of incorporation and amended and restated bylaws, we plan to enter into separate indemnification agreements with each of our directors and executive officers, which may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements may require us, among other things, to indemnify our directors and executive officers for some expenses, including attorneys' fees, expenses, judgments, fines and settlement amounts incurred by a director or executive officer in any action or proceeding arising out of his service as one of our directors or executive officers or any other company or enterprise to which the person provides services at our request. We believe that these provisions and agreements are necessary to attract and retain qualified individuals to serve as directors and executive officers.

This description of the indemnification provisions of our fifth amended and restated certificate of incorporation, our amended and restated bylaws and our indemnification agreements is qualified in its entirety by reference to these documents, each of which is attached as an exhibit to the registration statement of which this prospectus forms a part.



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Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable.

There is no pending litigation or proceeding naming any of our directors or officers as to which indemnification is being sought, nor are we aware of any pending or threatened litigation that may result in claims for indemnification by any director or officer.

## EXECUTIVE COMPENSATION

The following discussion contains forward-looking statements that are based on our current plans, considerations, expectations and determinations regarding future compensation programs. The actual amount and form of compensation and the compensation policies and practices that we adopt in the future may differ materially from currently planned programs as summarized in this discussion.

Our named executive officers, or NEOs, for the year ended December 31, 2020, which consist of our principal executive officer and the next two most highly compensated executive officers, are:

- Mark Manfredi, Ph.D., our President and Chief Executive Officer;
- Douglas R. Carlson, our Chief Financial Officer; and
- Sergio Santillana, M.D., M.Sc., MBA, our Chief Medical Officer.

To date, the compensation of our NEOs has consisted of a combination of base salary, cash bonuses and long-term incentive compensation in the form of stock options. Our NEOs, like all full-time employees, are eligible to participate in our health and welfare benefit plans. As we transition from a private company to a publicly traded company, we intend to evaluate our compensation values and philosophy and compensation plans and arrangements as circumstances require.

### 2020 Summary Compensation Table

The following table shows the total compensation earned by, or paid to, our NEOs for services rendered to us in all capacities during the fiscal year ended December 31, 2020.

<u>Name and principal position</u>	<u>Year</u>	<u>Salary (\$)</u>	<u>Bonus (\$)</u>	<u>Option Awards (\$)</u>	<u>Non-Equity Incentive Plan Compensation (\$)(1)</u>	<u>All Other Compensation (\$)</u>	<u>Total (\$)</u>
Mark Manfredi, Ph.D. <i>President and Chief Executive Officer</i>	2020	409,500	—	—	—	—	409,500
Douglas R. Carlson <i>Chief Financial Officer</i>	2020	330,372	—	—	—	—	330,372
Sergio Santillana, M.D., M.Sc., MBA(2) <i>Chief Medical Officer</i>	2020	137,499	—	586,700(3)	—	54,250(4)	778,449

- (1) Cash bonuses for performance during the year ended December 31, 2020 are not calculable as of the latest practicable date prior to the filing of this prospectus. We expect that such amounts will be determined later in the first quarter of the fiscal year ending December 31, 2021. For more information on these bonuses, see the description of the annual performance bonuses under “2020 bonuses” below.
- (2) Dr. Santillana joined our company as our Chief Medical Officer in July 2020. Pursuant to the terms of his employment agreement with us, Dr. Santillana devotes approximately 50% of his full working time to our company and his annual base salary for 2020 was \$275,000, which reflects his 50% commitment.
- (3) This amount represents the aggregate grant date fair value of the option award granted to Dr. Santillana during our fiscal year ended December 31, 2020, computed in accordance with FASB ASC Topic 718. A discussion of the assumptions used in determining grant date fair value may be found in Note to our financial statements for the year ended December 31, 2020, included elsewhere in this prospectus. This amount does not correspond to the actual value that may be recognized by Dr. Santillana upon exercise of the applicable award or sale of the underlying shares of stock.
- (4) The amount reported for Dr. Santillana represents fees paid to Dr. Santillana for his services as a consultant in 2020 prior to becoming our Chief Medical Officer in July 2020. Pursuant to the consulting agreement between us and Dr. Santillana, he was paid \$500 per hour for consulting services.

**Narrative Disclosure to Summary Compensation Table**

**2020 salaries**

Our NEOs each receive a base salary to compensate them for services rendered to our company. The base salary payable to each NEO is intended to provide a fixed component of compensation reflecting the executive’s skill set, experience, role and responsibilities. Base salaries are reviewed annually, typically in connection with our annual performance review process, approved by our board of directors or the compensation committee, and may be adjusted from time to time to realign salaries with market levels after taking into account individual responsibilities, performance, and experience.

For fiscal year 2020, the annual base salary for each of Dr. Manfredi, Mr. Carlson, and Dr. Santillana were \$409,500, \$330,372, and \$275,000, respectively. For Dr. Santillana, his 2020 base salary reflects that he devoted approximately 50% of his full working time to our company during the time that he served as our Chief Medical Officer in 2020.

**2020 bonuses**

For the fiscal year ended December 31, 2020, each NEO was eligible to earn an annual cash bonus based on the achievement of certain corporate and individual performance milestones. The target annual bonus for each of Dr. Manfredi, Mr. Carlson, and Dr. Santillana for the fiscal year ended December 31, 2020 were 35%, 35% and 35% of annual base salary, respectively.

The annual cash bonus earned by each NEO for the fiscal year ended December 31, 2020 has not been determined as of the date of this filing, but once determined will be reported in the “Non-Equity Incentive Plan Compensation” column of the “2020 Summary Compensation Table” above.

**Equity-based compensation**

Although we do not have a formal policy with respect to the grant of equity incentive awards to our executive officers, we believe that equity grants provide our executives with a strong link to our long-term performance, create an ownership culture and help to align the interests of our executives and our stockholders. In addition, we believe that equity grants promote executive retention because they incentivize our executive officers to remain in our employment during the vesting period. Accordingly, our board of directors or our compensation committee periodically review the equity incentive compensation of our NEOs and may grant equity incentive awards to them from time to time. In July 2020, in connection with his appointment as our Chief Medical Officer, we granted Dr. Santillana an option to purchase 1,128,269 shares of our common stock, with an exercise price per share equal to the fair market value of our common stock on the date of grant.

**Outstanding Equity Awards at 2020 Fiscal Year End**

The following table lists all outstanding equity awards held by our NEOs as of December 31, 2020.

Name	Option Awards(1)				
	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Vesting Commencement Date	Option Exercise Price (\$)	Option Expiration Date
Mark Manfredi	681,818(2)	—	4/15/2016	0.16	8/24/2026
	852,274(3)	284,089(3)	12/8/2017	0.41	2/19/2028
	811,692(4)	270,558(4)	12/14/2017	0.30	12/17/2028
	640,156(5)	823,046(5)	3/20/2019	0.58	3/19/2029
Douglas R. Carlson	556,822(6)	715,905(6)	1/28/2019	0.58	3/19/2029
Sergio Santillana	—	1,128,269(7)	7/1/2020	0.63	7/22/2030

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- (1) Each of the outstanding equity awards in the table above was granted pursuant to our 2016 Stock Incentive Plan, as amended, or the 2016 Plan.
- (2) Represents an option to purchase shares of our common stock granted on August 24, 2016. The shares underlying this option vest as follows: 25% of the shares vested on April 15, 2017 and the remainder vested over the next three years in equal monthly installments on the last day of each succeeding calendar month. All shares underlying this option have vested and are exercisable by Dr. Manfredi.
- (3) Represents an option to purchase shares of our common stock granted on February 20, 2018. The shares underlying this option vest in equal monthly installments on the last day of each calendar month following the vesting commencement date and will become fully vested on the fourth anniversary of the vesting commencement date, subject to continued service to us through the applicable vesting date.
- (4) Represents an option to purchase shares of our common stock granted on December 18, 2018. The shares underlying this option vest as follows: 25% of the shares vested on December 14, 2018 and the remainder vest over the next three years in equal monthly installments on the last day of each succeeding calendar month (with the option becoming fully vested on the fourth anniversary of the vesting commencement date), subject to continued service to us through the applicable vesting date.
- (5) Represents an option to purchase shares of our common stock granted on March 20, 2019. The shares underlying this option vest as follows: 25% of the shares vested on March 20, 2020 and the remainder vest over the next three years in equal monthly installments on the last day of each succeeding calendar month thereafter (with the option becoming fully vested on the fourth anniversary of the vesting commencement date), subject to continued service to us through the applicable vesting date.
- (6) Represents an option to purchase shares of our common stock granted on March 20, 2019. The shares underlying this option vest as follows: 25% of the shares vested on January 19, 2020 and the remainder vest over the next three years in equal monthly installments on the last day of each succeeding calendar month thereafter (with the option becoming fully vested on the fourth anniversary of the vesting commencement date), subject to continued service to us through the applicable vesting date.
- (7) Represents an option to purchase shares of our common stock granted on July 23, 2020. The shares underlying this option vest as follows: 25% of the shares vest on July 1, 2021 and the remainder vest over the next three years in equal monthly installments on the last day of each succeeding calendar month thereafter (with the option becoming fully vested on the fourth anniversary of the vesting commencement date), subject to continued service to us through the applicable vesting date.

### **Executive Compensation Arrangements**

In connection with this offering, we intend to enter into new employment agreements with each of Dr. Manfredi, Mr. Carlson, and Dr. Santillana.

#### ***Employment Arrangements in Place Prior to the Offering for Named Executive Officers***

##### ***Mark Manfredi, Ph.D.***

Effective December 8, 2017, we entered into an amended and restated employment agreement with Dr. Manfredi, or the Manfredi Employment Agreement, for the position of Chief Executive Officer. The Manfredi Employment Agreement provides for Dr. Manfredi's at-will employment. Dr. Manfredi's current annual base salary is \$409,500, and he is eligible for an annual bonus with a target amount of 35% of his current annual base salary. Dr. Manfredi is eligible to participate in the employee benefit plans available to our employees, subject to the terms of those plans.

Pursuant to the Manfredi Employment Agreement, in the event that Dr. Manfredi's employment is terminated by us without "cause" (as defined in the Manfredi Employment Agreement), subject to the execution and effectiveness of a severance and release of claims agreement within 60 days of such termination, Dr. Manfredi will be entitled to receive (i) six months of base salary continuation, (ii) accelerated vesting of the portion of the stock options and restricted stock awards held by Dr. Manfredi that would have vested in the six months

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following termination had Dr. Manfredi remained employed, and (iii) subject to the Dr. Manfredi's timely election to continue COBRA health coverage and copayment of premium amounts at the applicable active employees' rate, we will continue to pay the share of the premiums that we would have paid to provide health insurance to Dr. Manfredi until the earlier of (A) six months following termination or (B) Dr. Manfredi's eligibility for group medical plan benefits under any other employer's group medical plan. In the event that such termination occurs within six months after a "change in control" (as defined in the Manfredi Employment Agreement), Dr. Manfredi will, subject to the execution and effectiveness of a general severance and release of claims agreement within 60 days of such termination, be entitled to receive (x) a lump sum payment equal to six months of base salary, (y) accelerated vesting of 100% of any stock options and restricted stock awards held by Dr. Manfredi, and (z) the benefits set forth in clause (iii) of the preceding sentence.

### ***Douglas R. Carlson***

On December 21, 2018, we entered into an employment offer letter with Mr. Carlson, or the Carlson Offer Letter, to serve as our Chief Financial Officer. The Carlson Offer Letter provides for Mr. Carlson's at-will employment. Mr. Carlson's current base salary is \$330,372 and he is eligible for an annual bonus with a target amount of 35% of his base salary. Mr. Carlson is eligible to participate in the employee benefit plans available to our employees, subject to the terms of those plans. Pursuant to the Carlson Offer Letter, in the event that Mr. Carlson's employment is terminated by us without "cause" or by Mr. Carlson for "good reason" within one year of a "change of control" (as all such terms are defined in the 2016 Plan), then the unvested portion of the stock option granted to Mr. Carlson in March 2019 shall immediately vest in full.

### ***Sergio Santillana, M.D.***

Effective July 1, 2020, we entered into an employment agreement with Dr. Santillana, or the Santillana Employment Agreement, for the position of Chief Medical Officer. Pursuant to the terms of the Santillana Employment Agreement, Dr. Santillana devotes approximately 50% of his full working time to our company. The Santillana Employment Agreement provides for Dr. Santillana's at-will employment, his initial annual base salary of \$275,000 (subject to adjustment), and his eligibility for an annual bonus with a target amount of 35% of his annual base salary. Dr. Santillana is eligible to participate in the employee benefit plans available to our employees, subject to the terms of those plans.

Pursuant to the Santillana Employment Agreement, in the event that Dr. Santillana's employment is terminated by us without "cause" or by Dr. Santillana for "good reason" (as such terms are defined in the Santillana Employment Agreement), subject to the execution and effectiveness of a separation agreement and a general release of claims within 60 days of such termination, Dr. Santillana will be entitled to receive (i) six months of base salary continuation, (ii) acceleration of vesting of 50% (or in the event that Dr. Santillana converts to full time employment 100%) of the unvested portion of any time-based stock options and other stock-based awards subject to time-based vesting held by Dr. Santillana, and (iii) subject to the Dr. Santillana's timely election to continue COBRA health coverage and copayment of premium amounts at the applicable active employees' rate, a monthly cash payment equal to the amount that we would have paid to provide health insurance to Dr. Manfredi until the earliest of (A) six months following termination, (B) Dr. Santillana's eligibility for group medical plan benefits under any other employer's group medical plan or (C) the end of Dr. Santillana's COBRA health continuation period.

Dr. Santillana has also entered into an Invention and Non-Disclosure Agreement with us that contains non-disclosure provisions that apply during and following his employment with us.

## **Employee Benefit and Equity Compensation Plans**

### ***2016 Stock Incentive Plan***

Our 2016 Plan was adopted by our board of directors on March 4, 2016, approved by our stockholders on March 4, 2016 and most recently amended on December 18, 2020. As of December 31, 2020, under the 2016

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Plan, we have reserved for issuance an aggregate of 37,264,008 shares of our common stock. The number of shares of common stock reserved for issuance shall be equitably adjusted by our board of directors in the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event.

The shares of common stock underlying awards that are terminated, surrendered or cancelled, are forfeited in whole or in part or otherwise result in shares of common stock not being issued are currently added back to the shares of common stock available for issuance under the 2016 Plan. Following this offering, such shares will be added to the shares of common stock available for issuance under the 2021 Plan.

Our board of directors has acted as administrator of the 2016 Plan. The administrator has full power to select, from among the individuals eligible for awards, the individuals to whom awards will be granted, and to determine the specific terms and conditions of each award, subject to the provisions of the 2016 Plan. Persons eligible to participate in the 2016 Plan are employees, officers and directors of, and consultants and advisors to, our company as selected from time to time by the administrator in its discretion.

The 2016 Plan permits the granting of (1) options to purchase common stock intended to qualify as incentive stock options under Section 422 of the Code, and (2) options that do not so qualify. The per share exercise price of each option is determined by our board of directors but may not be less than 100% of the fair market value of the common stock on the date of grant. The term of each option is fixed by our board of directors but may not exceed 10 years from the date of grant. Our board of directors determines at what time or times each option may be exercised.

In addition, the 2016 Plan permits the granting of stock appreciation rights, restricted shares of common stock, restricted stock units and other stock-based awards.

The 2016 Plan provides that upon the occurrence of a “reorganization event,” as defined in the 2016 Plan, our board of directors may take any one or more of the following actions as to all or any (or any portion of) outstanding awards (other than restricted stock awards) except as provided otherwise in an award agreement or other agreement between us and a participant: (i) provide that all such awards will be assumed or substituted with substantially equivalent awards by the acquiring or succeeding corporation (or affiliate thereof); (ii) upon written notice to a participant, provide that all unexercised awards will terminate immediately prior to the consummation of such reorganization event unless exercised (to the extent then exercisable) within a specified period following the date of such notice; (iii) provide that outstanding awards shall become exercisable, realizable or deliverable, or that applicable restrictions shall lapse in whole or in part prior to or upon such reorganization event; (iv) in the event of a reorganization event under the terms of which holders of common stock will receive a cash payment for each share surrendered in the reorganization event, or the “acquisition price,” provide for a cash payment to participants with respect to each award equal to the number of shares subject to the vested portion of such award (after giving effect to any acceleration of vesting in connection with such reorganization event) multiplied by the excess, if any, of the acquisition price over the exercise price of such award and any applicable withholdings, in exchange for the termination of such award; (v) provide that in connection with a liquidation or dissolution of the company, awards shall convert into the right to receive liquidation proceeds net the exercise price thereof and any applicable withholdings; and (vi) any combination of the foregoing. Upon a reorganization event other than a liquidation or dissolution of the company, the repurchase and other rights of the company with respect to outstanding restricted stock shall inure to the benefit of the company’s successor and shall, unless our board of directors determines otherwise, apply to the cash, securities or other property which the common stock was converted into or exchanged for pursuant to such reorganization event in the same manner and to the same extent as they applied to such restricted stock; provided that the board of directors may provide for termination or deemed satisfaction of such repurchase or other rights under the applicable award agreement. Upon a reorganization event involving the liquidation or dissolution of the company, except as specifically provided in an award agreement or other agreement with the participant, all restrictions and conditions on all restricted stock then outstanding shall automatically be deemed terminated or satisfied.

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The board of directors may amend or discontinue the 2016 Plan at any time, subject to stockholder approval where such approval is required by applicable law. The administrator of the 2016 Plan may also amend or cancel any outstanding award, provided that no amendment to an award may materially adversely affect a participant's rights without his or her consent. The administrator of the 2016 Plan is specifically authorized to exercise its discretion to reduce the exercise price of outstanding awards or effect the repricing of such awards through cancellation and re-grants.

The 2016 Plan will automatically terminate upon the earlier of 10 years from the date on which the 2016 Plan was initially adopted by our board of directors or 10 years from the date the 2016 Plan was initially approved by our stockholders. As of \_\_\_\_\_, 2021, options to purchase shares of common stock were outstanding under the 2016 Plan. Our board of directors has determined not to make any further awards under the 2016 Plan following the closing of this offering.

### **2021 Stock Option and Incentive Plan**

Our 2021 Stock Option and Incentive Plan, or 2021 Plan, was adopted by our board of directors on \_\_\_\_\_, 2021, approved by our stockholders on \_\_\_\_\_, 2021 and will become effective upon the date immediately preceding the date on which the registration statement of which this prospectus is part is declared effective by the SEC. The 2021 Plan will replace the 2016 Plan as our board of directors has determined not to make additional awards under the 2016 Plan following the closing of our initial public offering. However, the 2016 Plan will continue to govern outstanding equity awards granted thereunder. The 2021 Plan allows us to make equity-based and cash-based incentive awards to our officers, employees, directors and consultants.

We have initially reserved \_\_\_\_\_ shares of our common stock for the issuance of awards under the 2021 Plan, or the Initial Limit. The 2021 Plan provides that the number of shares reserved and available for issuance under the 2021 Plan will automatically increase on January 1, 2022 and each January 1 thereafter, by \_\_\_\_\_ % of the outstanding number of shares of our common stock on the immediately preceding December 31 or such lesser number of shares as determined by our compensation committee, or the Annual Increase. The number of shares reserved under the 2021 Plan subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization.

The shares we issue under the 2021 Plan will be authorized but unissued shares or shares that we reacquire. The shares of common stock underlying any awards under the 2021 Plan and the 2016 Plan that are forfeited, cancelled, held back upon exercise or settlement of an award to satisfy the exercise price or tax withholding, reacquired by us prior to vesting, satisfied without the issuance of stock, expire or are otherwise terminated (other than by exercise) will be added back to the shares of common stock available for issuance under the 2021 Plan.

The maximum number of shares of common stock that may be issued in the form of incentive stock options shall not exceed the Initial Limit, cumulatively increased on January 1, 2022 and on each January 1 thereafter by the lesser of the Annual Increase for such year or \_\_\_\_\_ shares of common stock.

The grant date fair value of all awards made under our 2021 Plan and all other cash compensation paid by us to any non-employee director in any calendar year for services as a non-employee director shall not exceed \$ \_\_\_\_\_; provided, however, that such amount shall be \$ \_\_\_\_\_ for the calendar year in which the applicable non-employee director is initially elected or appointed to the board of directors.

The 2021 Plan will be administered by our compensation committee. Our compensation committee has the full power to select, from among the individuals eligible for awards, the individuals to whom awards will be granted and the number of shares subject to such awards, to make any combination of awards to participants, to accelerate at any time the exercisability or vesting of any award and to determine the specific terms and conditions of each award, subject to the provisions of the 2021 Plan. Persons eligible to participate in the 2021

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Plan will be those full or part-time officers, employees, non-employee directors and consultants as selected from time to time by our compensation committee in its discretion.

The 2021 Plan permits the granting of both options to purchase common stock intended to qualify as incentive stock options under Section 422 of the Code and options that do not so qualify. The option exercise price of each option will be determined by our compensation committee but may not be less than 100% of the fair market value of our common stock on the date of grant unless the option is granted (i) pursuant to a transaction described in, and in a manner consistent with Section 424(a) of the Code or (ii) to individuals who are not subject to U.S. income tax. The term of each option will be fixed by our compensation committee and may not exceed 10 years from the date of grant. Our compensation committee will determine at what time or times each option may be exercised.

Our compensation committee may award stock appreciation rights under the 2021 Plan subject to such conditions and restrictions as it may determine. Stock appreciation rights entitle the recipient to shares of common stock, or cash, equal to the value of the appreciation in our stock price over the exercise price. The exercise price of each stock appreciation right may not be less than 100% of the fair market value of our common stock on the date of grant. The term of each stock appreciation right will be fixed by our compensation committee and may not exceed 10 years from the date of grant. Our compensation committee will determine at what time or times each stock appreciation right may be exercised.

Our compensation committee may award restricted shares of common stock and restricted stock units to participants subject to such conditions and restrictions as it may determine. These conditions and restrictions may include the achievement of certain performance goals and/or continued employment with us through a specified vesting period. Our compensation committee may also grant shares of common stock that are free from any restrictions under the 2021 Plan. Unrestricted stock may be granted to participants in recognition of past services or for other valid consideration and may be issued in lieu of cash compensation due to such participant.

Our compensation committee may grant dividend equivalent rights to participants that entitle the recipient to receive credits for dividends that would be paid if the recipient had held a specified number of shares of common stock.

Our compensation committee may grant cash bonuses under the 2021 Plan to participants, subject to the achievement of certain performance goals.

The 2021 Plan provides that upon the effectiveness of a “sale event,” as defined in the 2021 Plan, an acquirer or successor entity may assume, continue or substitute outstanding awards under the 2021 Plan. To the extent that awards granted under the 2021 Plan are not assumed or continued or substituted by the successor entity, upon the effective time of the sale event, such awards shall terminate. In such case, except as may be otherwise provided in the relevant award certificate, all awards with time-based vesting, conditions or restrictions shall become fully vested and nonforfeitable as of the effective time of the sale event and all awards with conditions and restrictions relating to the attainment of performance goals may become vested and nonforfeitable in connection with a sale event in the administrator’s discretion or to the extent specified in the relevant award certificate. In the event of such termination, (i) individuals holding options and stock appreciation rights will be permitted to exercise such options and stock appreciation rights (to the extent exercisable) within a specified period of time prior to the sale event or (ii) we may make or provide for a payment, in cash or in kind, to participants holding vested and exercisable options and stock appreciation rights equal to the difference between the per share consideration payable to stockholders in the sale event and the exercise price of the options or stock appreciation rights and we may make or provide for a payment, in cash or in kind, to participants holding other vested awards.

Our board of directors may amend or discontinue the 2021 Plan and our compensation committee may amend or cancel outstanding awards for purposes of satisfying changes in law or any other lawful purpose, but no such action may adversely affect rights under an award without the holder’s consent. Certain amendments to the 2021



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Plan require the approval of our stockholders. The administrator of the 2021 Plan is specifically authorized to exercise its discretion to reduce the exercise price of outstanding stock options and stock appreciation rights or effect the repricing of such awards through cancellation and re-grants without stockholder consent. No awards may be granted under the 2021 Plan after the date that is 10 years from the effective date of the 2021 Plan. No awards under the 2021 Plan have been made prior to the date of this prospectus.

### **2021 Employee Stock Purchase Plan**

Our 2021 Employee Stock Purchase Plan, or ESPP, was adopted by our board of directors on \_\_\_\_\_, 2021, approved by our stockholders on \_\_\_\_\_, 2021 and will become effective on the date immediately preceding the date on which the registration statement of which this prospectus forms a part is declared effective by the SEC. The ESPP is intended to qualify as an “employee stock purchase plan” within the meaning of Section 423 of the Code. The ESPP initially reserves and authorizes the issuance of up to a total of \_\_\_\_\_ shares of our common stock to participating employees. The ESPP provides that the number of shares reserved and available for issuance will automatically increase on January 1, 2022 and each January 1 thereafter through January 1, 2031, by the least of (i) \_\_\_\_\_ shares of our common stock, (ii) \_\_\_\_\_ % of the outstanding number of shares of common stock on the immediately preceding December 31, or (iii) such lesser number of shares of common stock as determined by the administrator of the ESPP. The number of shares reserved under the ESPP is subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization.

All employees who are customarily employed by us or one of our designated subsidiaries for more than \_\_\_\_\_ hours per week and who we have employed for at least \_\_\_\_\_ days are eligible to participate in the ESPP. However, any employee who owns 5% or more of the total combined voting power or value of all classes of our stock will not be eligible to purchase shares of common stock under the ESPP.

We may make one or more offerings each year to our employees to purchase shares under the ESPP. Offerings will usually begin on each \_\_\_\_\_ and \_\_\_\_\_ and will continue for six-month periods, referred to as offering periods. Each eligible employee may elect to participate in any offering by submitting an enrollment form at least 15 business days before the applicable offering date

Each employee who is a participant in the ESPP may purchase shares of our common stock by authorizing payroll deductions of up to 15% of his or her eligible compensation during an offering period. Unless the participating employee has previously withdrawn from the offering, his or her accumulated payroll deductions will be used to purchase shares of our common stock on the last business day of the offering period at a price equal to 85% of the fair market value of the shares of our common stock on the first business day or the last business day of the offering period, whichever is lower, provided that no more \$25,000 worth of common stock (or such other lesser maximum number of shares as may be established by the administrator) may be purchased by any one employee during any offering period. Under applicable tax rules, an employee may purchase no more than \$25,000 worth of shares of our common stock, valued at the start of the purchase period, under the ESPP in any calendar year.

The accumulated payroll deductions of any employee who is not a participant on the last day of an offering period will be refunded. An employee’s rights under the ESPP terminate upon voluntary withdrawal from the plan or when the employee ceases employment with us for any reason. The ESPP may be terminated or amended by our board of directors at any time. An amendment that increases the number of shares of our common stock authorized under the ESPP and certain other amendments require the approval of our stockholders.

### **Senior Executive Cash Incentive Bonus Plan**

On \_\_\_\_\_, 2021 our board of directors adopted the Senior Executive Cash Incentive Bonus Plan, or the Bonus Plan. The Bonus Plan provides for annual cash bonus payments based upon the attainment of company

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and individual performance targets established by our compensation committee. The payment targets will be related to financial and operational measures or objectives with respect to our company, or the Corporate Performance Goals, as well as individual performance objectives.

Our compensation committee may select Corporate Performance Goals from among the following: cash flow (including, but not limited to, operating cash flow and free cash flow); revenue; corporate revenue; earnings before interest, taxes, depreciation and amortization; net income (loss) (either before or after interest, taxes, depreciation and/or amortization); changes in the market price of our common stock; economic value-added; acquisitions or strategic transactions, including collaborations, joint ventures or promotion arrangements; operating income (loss); return on capital assets, equity, or investment; stockholder returns; return on sales; gross or net profit levels; productivity; expense efficiency; margins; operating efficiency; customer satisfaction; working capital; earnings (loss) per share of our common stock; bookings, new bookings or renewals; sales or market shares; number of customers, number of new customers or customer references; operating income and/or net annual recurring revenue; or any other performance goal as selected by the compensation committee, any of which may be measured in absolute terms, as compared to any incremental increase, in terms of growth, as compared to results of a peer group, against the market as a whole, compared to applicable market indices and/or measured on a pre-tax or post-tax basis.

Each executive officer who is selected to participate in the Bonus Plan will have a target bonus opportunity set for each performance period. The bonus formulas will be adopted in each performance period by the compensation committee and communicated to each executive. The Corporate Performance Goals will be measured at the end of each performance period after our financial reports have been published or such other appropriate time as the compensation committee determines. If the Corporate Performance Goals and individual performance objectives are met, payments will be made as soon as practicable following the end of each performance period, but no later than 74 days after the end of the fiscal year in which such performance period ends. Subject to the rights contained in any agreement between the executive officer and us, an executive officer must be employed by us on the bonus payment date to be eligible to receive a bonus payment. The Bonus Plan also permits the compensation committee to approve additional bonuses to executive officers in its sole discretion.

### **401(k) plan**

We currently maintain a 401(k) retirement savings plan for our employees, including our NEOs, who satisfy certain eligibility requirements. Our NEOs are eligible to participate in the 401(k) plan on the same terms as other full-time employees. Our 401(k) plan is intended to qualify for favorable tax treatment under Section 401(a) of the Code and contains a cash or deferred feature that is intended to meet the requirements of Section 401(k) of the Code. We believe that providing a vehicle for tax-deferred retirement savings through our 401(k) plan adds to the overall desirability of our executive compensation package and further incentivizes our employees, including our NEOs, in accordance with our compensation policies.

**NON-EMPLOYEE DIRECTOR COMPENSATION**

The following table presents the total compensation for each person who served as a non-employee member of our board of directors during the year ended December 31, 2020. Other than as set forth in the table and described more fully below, we did not pay any compensation, make any equity awards or non-equity awards to, or pay any other compensation to any of the non-employee members of our board of directors in 2020. During fiscal year 2020, Mark Manfredi, our President and Chief Executive Officer served as a member of our board of directors and received no additional compensation for his services as a member of our board of directors. See the section titled “Executive Compensation” for more information about Dr. Manfredi’s compensation for fiscal year 2020. We reimburse non-employee members of our board of directors for reasonable travel and out-of-pocket expenses incurred in attending meetings of our board of directors and committees of our board of directors.

	<u>Fees Earned or Paid in Cash (\$)</u>	<u>Option Awards (\$)(1)</u>	<u>All Other Compensation (\$)</u>	<u>Total (\$)</u>
David Bonita, M.D.	—	—	—	—
Iain Dukes, D.Phil.	—	—	—	—
Jean-Francois Formela, M.D.	—	—	—	—
George Georgiou, Ph.D.	—	—	—	—
Ronald Renaud	—	—	—	—
Otello Stampacchia, Ph.D.	—	—	—	—

- (1) There were no options or other equity awards granted to directors in 2020. Except as noted below, none of our directors held options to purchase our common stock or any other stock awards as of December 31, 2020.

	<u>Aggregate Number of Shares Subject to Stock Options</u>
Iain Dukes, D.Phil.	1,691,362
Ronald Renaud	901,364

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### **Non-Employee Director Compensation Policy**

In connection with this offering, we intend to adopt a non-employee director compensation policy that will become effective upon the completion of this offering and will be designed to enable us to attract and retain, on a long-term basis, highly qualified non-employee directors. Under the policy, each director who is not an employee will be paid cash compensation from and after the completion of this offering, as set forth below:

	<b>Annual Retainer</b>
<b>Board of Directors:</b>	
Members	\$
Additional retainer for non-executive chair	\$
<b>Audit Committee:</b>	
Members (other than chair)	\$
Retainer for chair	\$
<b>Compensation Committee:</b>	
Members (other than chair)	\$
Retainer for chair	\$
<b>Nominating and Corporate Governance Committee:</b>	
Members (other than chair)	\$
Retainer for chair	\$

In addition, the non-employee director compensation policy will provide that, upon initial election to our board of directors, each non-employee director will be granted an option to purchase \_\_\_\_\_ shares of our common stock, or Initial Grant. The Initial Grant will vest in equal installments on the first, second, and third anniversaries of the grant date, subject to continued service through the applicable vesting date. Furthermore, on the date of each annual meeting of stockholders following the completion of this offering, each non-employee director who continues as a non-employee director following such meeting will be granted an annual option to purchase \_\_\_\_\_ shares of our common stock, or Annual Grant. The Annual Grant will vest in full on the earlier of (i) the first anniversary of the grant date or (ii) our next annual meeting of stockholders, subject to continued service through the applicable vesting date. Such awards are subject to full accelerated vesting upon the sale of the company.

We will reimburse all reasonable out-of-pocket expenses incurred by non-employee directors in attending meetings of the board of directors and committees thereof.

## CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a description of transactions or series of transactions since January 1, 2018, to which we were or will be a party, in which:

- the amount involved in the transaction exceeds, or will exceed, the lesser of \$120,000 or one percent of the average of the Company's total assets for the last two completed fiscal years; and
- in which any of our executive officers, directors or holders of five percent or more of any class of our capital stock, including their immediate family members or affiliated entities, had or will have a direct or indirect material interest.

Compensation arrangements for our named executive officers and our directors are described elsewhere in this prospectus under "Executive Compensation" and "Non-Employee Director Compensation."

### Collaboration Agreement

In January 2019, we entered into a master collaboration agreement, or the BMS Collaboration Agreement, with Celgene Corporation (which was acquired by Bristol-Myers Squibb Company, or BMS, in November 2019) under which BMS may elect in its sole discretion to exclusively license rights to develop and commercialize compounds (and products and diagnostic products containing such compounds) that modulate the activity of two collaboration targets, kynurenine and AHR excluding AHR agonists except for inverse agonists, or the Collaboration Candidates. The BMS Collaboration Agreement triggered an upfront payment of \$95.0 million, which consisted of approximately \$80.5 million in cash and an equity investment of approximately \$14.5 million for which we issued 14,545,450 shares of our Series A-1 Preferred Stock pursuant to a separate share purchase agreement. See "—Private Placements of Securities—Series A-1 Preferred Stock Financing" and "Business—Master Collaboration Agreement with Bristol-Myers Squibb" for additional information. BMS is a holder of five percent or more of our capital stock.

### Private Placements of Securities

#### Series A-1 Preferred Stock Financing

In January 2019, in connection with the BMS Collaboration Agreement, we sold 14,545,450 shares of Series A-1 Preferred Stock at a purchase price of \$1.00 per share to Celgene Corporation (now BMS) for an aggregate purchase price of \$14.5 million. Celgene Corporation (BMS) is a holder of five percent or more of our capital stock.

<u>Participant</u>	<u>Shares of Series A-1 Preferred Stock</u>	<u>Total Purchase Price (\$)</u>
Celgene Corporation (BMS)	14,545,450	14,545,450

### Series B Convertible Preferred Stock Financing

In December 2020, we sold an aggregate of 85,806,214 shares of our Series B preferred stock at a purchase price of \$1.3985 per share for aggregate proceeds of \$120.0 million. The following table summarizes purchases of our Series B preferred stock by related persons:

Participant	Shares of Series B Preferred Stock	Total Purchase Price (\$)
Entities affiliated with FMR LLC(1)	17,876,296	24,999,999.96
Entities affiliated with OrbiMed Advisors LLC(2)	16,088,665	22,499,998.00
Omega Fund VI, L.P.(3)	12,870,933	17,999,999.80
Atlas Venture Opportunity Fund I, L.P.(4)	5,362,888	7,499,998.87
Celgene Corporation (BMS)	715,051	999,998.82

- (1) Entities affiliated with FMR LLC collectively beneficially own more than five percent of our outstanding capital stock.
- (2) Entities affiliated with OrbiMed Advisors LLC, or OrbiMed Advisors, collectively beneficially own more than five percent of our outstanding capital stock. Dr. Bonita is a member of OrbiMed Advisors and a member of our board of directors.
- (3) Omega Fund VI, L.P. is a holder of five percent or more of our capital stock. Mr. Stampacchia is a Managing Director and co-founder of Omega Fund Management, LLC, is one of three directors of Omega Fund VI GP Manager, Ltd., the sole general partner of Omega Fund VI GP, L.P., which is the sole General Partner of Omega Fund VI, L.P. and is a member of our board of directors.
- (4) Atlas Venture Opportunity Fund I, L.P. is an affiliate of Atlas Venture. Entities affiliated with Atlas Venture collectively beneficially own more than five percent of our outstanding capital stock. Dr. Formela is a partner at Atlas Venture and a member of our board of directors.

### Other Agreements with Our Stockholders

In connection with our Series B convertible preferred stock financing, we entered into investors' rights, voting and right of first refusal and co-sale agreements containing registration rights, information rights, voting rights and rights of first refusal, among other things, with certain holders of our preferred stock and certain holders of our common stock. These stockholder agreements will terminate upon the closing of this offering, except for the registration rights granted under our investors' rights agreement, as more fully described in "Description of Capital Stock—Registration Rights."

### Merger Agreements

On December 18, 2018, we entered into an agreement and plan of merger with Arrys Merger Sub, Inc., Arrys Therapeutics, Inc., and OrbiMed Private Investments VI, LP. We refer to this agreement as the Arrys Merger Agreement. Under the Arrys Merger Agreement, we agreed to merge with the other parties party thereto, resulting in Arrys Merger Sub, Inc. ceasing to exist and Arrys Therapeutics, Inc. becoming our wholly owned subsidiary. For more information regarding the Arrys Merger Agreement, see "Note 3 – Arrys Acquisition," to our financial statements for the year ended December 31, 2019, included elsewhere in this prospectus.

On October 1, 2020, we entered into an agreement and plan of merger with AMI Merger Sub, Inc., Amplify Medicines, Inc., and Atlas Venture Fund XI, L.P. We refer to this agreement as the AMI Merger Agreement. Under the AMI Merger Agreement, we agreed to merge with the other parties party thereto, resulting in AMI Merger Sub, Inc. ceasing to exist and Amplify Medicines, Inc. becoming our wholly owned subsidiary. For more information regarding the AMI Merger Agreement, see "Note 17—Subsequent Events," to our financial statements for the year ended December 31, 2019, included elsewhere in this prospectus.

### **Indemnification Agreements**

We have entered into agreements to indemnify our directors and executive officers. These agreements will, among other things, require us to indemnify these individuals for certain expenses (including attorneys' fees), judgments, fines and settlement amounts reasonably incurred by such person in any action or proceeding, including any action by or in our right, on account of any services undertaken by such person on our behalf or that person's status as a member of our board of directors to the maximum extent allowed under Delaware law.

### **Policies for approval of related party transactions**

Our board of directors reviews and approves transactions with directors, officers and holders of five percent or more of our voting securities and their affiliates, each a related party. Prior to this offering, the material facts as to the related party's relationship or interest in the transaction are disclosed to our board of directors prior to their consideration of such transaction, and the transaction is not considered approved by our board of directors unless a majority of the directors who are not interested in the transaction approve the transaction. Further, when stockholders are entitled to vote on a transaction with a related party, the material facts of the related party's relationship or interest in the transaction are disclosed to the stockholders, who must approve the transaction in good faith.

In connection with this offering, we have adopted a written related party transactions policy that such transactions must be approved by our audit committee. This policy will become effective on the date on which the registration statement of which this prospectus is part is declared effective by the SEC.

## PRINCIPAL STOCKHOLDERS

The following table sets forth certain information known to us regarding beneficial ownership of our capital stock as of December 31, 2020, as adjusted to reflect the sale of common stock offered by us in this offering, for:

- each person or group of affiliated persons known by us to be the beneficial owner of more than five percent of our capital stock;
- each of our named executive officers;
- each of our directors; and
- all of our executive officers and directors as a group.

Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Under those rules, beneficial ownership includes any shares as to which the individual or entity has sole or shared voting power or investment power with respect to the securities as well as any shares of common stock that the individual or entity has the right to acquire within 60 days of December 31, 2020 through the exercise of stock options or other rights. These shares are deemed to be outstanding and beneficially owned by the person holding those options for the purpose of computing the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Except as noted by footnote, and subject to community property laws where applicable, we believe, based on the information provided to us, that the persons and entities named in the table below have sole voting and investment power with respect to all common stock shown as beneficially owned by them.

Each individual or entity shown on the table has furnished information with respect to beneficial ownership. Unless otherwise indicated, the address for each beneficial owner is c/o Ikena Oncology, Inc., 50 Northern Avenue, Boston, MA 02210.



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The percentage of beneficial ownership prior to this offering in the table below is based on \_\_\_\_\_ shares of common stock deemed to be outstanding as of December 31, 2020, assuming the conversion of all outstanding shares of our preferred stock immediately prior to the completion of this offering, and the percentage of beneficial ownership at this offering in the table below is based on \_\_\_\_\_ shares of common stock assumed to be outstanding after the closing of the offering. The information in the table below assumes no exercise of the underwriters' option to purchase additional shares.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Outstanding Beneficially Owned	
		Before Offering	After Offering
Entities affiliated with OrbiMed Advisors LLC(1)	56,512,367	%	%
Entities affiliated with Atlas Venture(2)	35,193,805	%	%
Entities affiliated with FMR LLC(3)	17,876,296	%	%
Celgene Corporation (Bristol-Meyers Squibb)(4)	15,260,501	%	%
Omega Fund VI, L.P.(5)	12,870,933	%	%
<b>Named Executive Officers and Directors:</b>			
Mark Manfredi, Ph.D.(6)	3,139,350	%	%
Douglas R. Carlson(7)	609,852	%	%
Sergio Santillana, M.D., M.Sc., MBA	—	%	%
Ron Renaud(8)	528,499	%	%
David Bonita, M.D.(1)	—	%	%
Iain D. Dukes, D.Phil.(9)	1,043,235	%	%
Jean-François Formela, M.D.(2)	—	%	%
Otello Stampacchia, Ph.D.(5)	—	%	%
All executive officers and directors as a group (10 persons)(10)	6,729,835	%	%

\* Less than one percent.

- (1) Consists of (i) 18,500,001 shares of our common stock issuable upon conversion of our Series A preferred stock held by OrbiMed Private Investments VI, LP, (“OPI VI”), (ii) 21,923,701 shares of our common stock issuable upon conversion of our Series A-1 preferred stock held by OPI VI, (iii) 8,938,148 shares of our common stock issuable upon conversion of our Series B preferred stock held by OPI VI, (iv) 5,720,414 shares of our common stock issuable upon conversion of our Series B preferred stock held by Worldwide Healthcare Trust PLC (“WWH”), and (v) 1,430,103 shares of our common stock issuable upon conversion of our Series B preferred stock held by OrbiMed Genesis Master Fund, L.P. (“OrbiMed Genesis”). Dr. Bonita is a member of OrbiMed Advisors and is a member of our board of directors. OrbiMed Capital GP VI LLC (“OrbiMed GP VI”) is the general partner of OPI VI and OrbiMed Advisors is its managing member. OrbiMed Capital LLC (“OrbiMed Capital”) is the portfolio manager of WWH. OrbiMed Genesis GP LLC is the general partner of OrbiMed Genesis and OrbiMed Advisors is its managing member. By virtue of such relationships, OrbiMed Genesis GP LLC, OrbiMed GP VI, OrbiMed Capital, and OrbiMed Advisors may be deemed to have voting power and investment power over the securities held by OPI VI, WWH, and OrbiMed Genesis (collectively, the “OrbiMed Funds”), and as a result, may be deemed to have beneficial ownership over such securities. OrbiMed Capital is a relying advisor of OrbiMed Advisors. OrbiMed Capital and OrbiMed Advisors exercise voting and investment power through a management committee comprised of Carl L. Gordon, Sven H. Borho, and Jonathan T. Silverstein. Each of OrbiMed Advisors, OrbiMed GP VI, OrbiMed Capital, OrbiMed Genesis GP LLC, Dr. Bonita, Carl L. Gordon, Sven H. Borho, and Jonathan T. Silverstein disclaims beneficial ownership of the shares held by the OrbiMed Funds, except to the extent of its or his pecuniary interest therein if any. The principal business address of the OrbiMed Funds is c/o OrbiMed Advisors, 601 Lexington Avenue 54th Floor, New York, NY 10022.
- (2) Consists of (i) 1,209,707 shares of common stock held by Atlas Venture Fund XI, L.P. (“Atlas XI”), (ii) 9,499,999 shares of our common stock issuable upon conversion of our Series A preferred stock held by

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Atlas Venture Fund X, L.P. (“Atlas X”), (iii) 11,258,117 shares of our common stock issuable upon conversion of our Series A-1 preferred stock held by Atlas X, (iv) 7,863,094 shares of our common stock issuable upon conversion of our Series A-2 preferred stock held by Atlas XI and (v) 5,362,888 shares of our common stock issuable upon conversion of our Series B preferred stock held by Atlas Venture Opportunity Fund I, L.P. (“Atlas Opportunity”). Atlas Venture Associates X, L.P. (“Associates X”) is the General Partner of Atlas X, and Atlas Venture Associates X, LLC (“X LLC”) is the general partners of Associates X. Atlas Venture Associates XI, L.P. (“Associates XI”) is the General Partner of Atlas XI, and Atlas Venture Associates XI, LLC (“XI LLC”) is the general partners of Associates XI. Atlas Venture Associates Opportunity I, L.P. (“Associates I”) is the General Partner of Atlas Opportunity, and Atlas Venture Associates Opportunity I, LLC (“I LLC”) is the general partners of Associates I. Dr. Formela is one of the members of X LLC, XI LLC and I LLC and collectively with other members of each respective LLC makes investments decisions for such LLC. Dr. Formela is also a member of our board of directors. The address of Atlas Venture Fund VIII LP is 300 Technology Square, Cambridge, MA 02139.

- (3) Consists of (i) 10,131 shares of common stock issuable upon conversion of the Series B Preferred Stock held by Fidelity Capital Trust: Fidelity Flex Small Cap Fund—Small Cap Growth Subportfolio, (ii) 3,645,400 shares of common stock issuable upon conversion of the Series B Preferred Stock held by Fidelity Securities Fund: Fidelity Small Cap Growth Fund, (iii) 822,200 shares of common stock issuable upon conversion of the Series B Preferred Stock held by Fidelity Securities Fund: Fidelity Small Cap Growth K6 Fund, (iv) 2,022,700 shares of common stock issuable upon conversion of the Series B Preferred Stock held by Fidelity Advisor Series VII: Fidelity Advisor Biotechnology Fund, (v) 1,024,065 shares of common stock issuable upon conversion of the Series B Preferred Stock held by Fidelity Capital Trust: Fidelity Stock Selector Small Cap Fund, (vi) 4,068,100 shares of common stock issuable upon conversion of the Series B Preferred Stock held by Fidelity Securities Fund: Fidelity Series Small Cap Opportunities Fund, and (vii) 6,283,700 shares of common stock issuable upon conversion of the Series B Preferred Stock held by Fidelity Select Portfolios: Biotechnology Portfolios (collectively, the “Fidelity Funds”). The Fidelity Funds are managed by direct or indirect subsidiaries of FMR LLC. Edward C. Johnson 3d is a Director and the Chairman of FMR LLC and Abigail P. Johnson is a Director, the Vice Chairman and the President of FMR LLC. Members of the family of Edward C. Johnson 3d, including Abigail P. Johnson, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders’ voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders’ voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. Neither FMR LLC nor Edward C. Johnson 3d nor Abigail P. Johnson has the sole power to vote or direct the voting of the shares owned directly by the various investment companies registered under the Investment Company Act (Fidelity Funds) advised by Fidelity Management & Research Company (FMR Co), a wholly owned subsidiary of FMR LLC, which power resides with the Fidelity Funds’ Boards of Trustees. Fidelity Management & Research Company carries out the voting of the shares under written guidelines established by the Fidelity Funds’ Boards of Trustees. The address of FMR LLC and associated funds is 245 Summer Street Boston, MA 02210.
- (4) Consists of (i) 14,545,450 shares of our common stock issuable upon conversion of our Series A-1 preferred stock and (ii) 715,051 shares of our common stock issuable upon conversion of our Series B preferred stock. Celgene has the power to vote, acquire, hold and dispose of all such shares. Celgene disclaims beneficial ownership of these shares, except to the extent of its pecuniary interest therein. The principal address for Celgene is 86 Morris Avenue, Summit, NJ 07901.
- (5) Consists of 12,870,933 shares of our common stock issuable upon conversion of our Series B preferred stock. Dr. Stampacchia is founder, Managing Director, and a member of the five-member investment committee at Omega Funds. Dr. Stampacchia is one of three directors of Omega Fund VI GP Manager, Ltd., the sole general partner of Omega Fund VI GP, L.P., which is the sole General Partner of Omega Fund VI, L.P. Dr. Stampacchia may therefore be deemed to be the beneficial owner of the shares held by Omega

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Fund VI, L.P. Omega Fund VI GP Manager, Ltd., Omega Fund VI GP, L.P. and each of the directors of Omega Fund VI GP Manager Ltd. disclaim beneficial ownership of the shares held by Omega Fund VI, L.P. except to the extent of their pecuniary interest therein. The address of Omega Fund VI, L.P. is 888 Boylston Street, Suite 1111, Boston, MA 02199.

- (6) Consists of options to purchase 3,139,350 shares of our common stock that are exercisable within 60 days of December 31, 2020.
- (7) Consists of options to purchase 609,852 shares of our common stock that are exercisable within 60 days of December 31, 2020.
- (8) Consists of options to purchase 528,499 shares of our common stock that are exercisable within 60 days of December 31, 2020.
- (9) Consists of options to purchase 1,043,235 shares of our common stock that are exercisable within 60 days of December 31, 2020.
- (10) Consists of options to purchase 6,729,835 shares of our common stock that are exercisable within 60 days of December 31, 2020.

## DESCRIPTION OF CAPITAL STOCK

*The following descriptions are summaries of the material terms of our fifth amended and restated certificate of incorporation, which will be effective upon the closing of this offering and amended and restated bylaws, which will be effective upon the effectiveness of the registration statement of which this prospectus is a part. The descriptions of the common stock and preferred stock give effect to changes to our capital structure that will occur immediately prior to the completion of this offering. We refer in this section to our fifth amended and restated certificate of incorporation as our certificate of incorporation, and we refer to our amended and restated bylaws as our bylaws.*

### General

Upon completion of this offering, our authorized capital stock will consist of \_\_\_\_\_ shares of common stock, par value \$0.001 per share, and \_\_\_\_\_ shares of preferred stock, par value \$0.001 per share, all of which shares of preferred stock will be undesignated.

As of December 31, 2020, 22,155,319 shares of our common stock were outstanding and held by 21 stockholders of record. This amount assumes the conversion of all outstanding shares of our preferred stock into common stock, which will occur immediately prior to the closing of this offering.

### Common stock

The holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of the stockholders. The holders of our common stock do not have any cumulative voting rights. Holders of our common stock are entitled to receive ratably any dividends declared by our board of directors out of funds legally available for that purpose, subject to any preferential dividend rights of any outstanding preferred stock. Our common stock has no preemptive rights, conversion rights or other subscription rights or redemption or sinking fund provisions.

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in all assets remaining after payment of all debts and other liabilities and any liquidation preference of any outstanding preferred stock. The shares to be issued by us in this offering will be, when issued and paid for, validly issued, fully paid and non-assessable.

### Preferred stock

Immediately prior to the completion of this offering, all outstanding shares of our preferred stock will be converted into shares of our common stock. Upon the consummation of this offering, our board of directors will have the authority, without further action by our stockholders, to issue up to \_\_\_\_\_ shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of common stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon our liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of our Company or other corporate action. Immediately after consummation of this offering, no shares of preferred stock will be outstanding, and we have no present plan to issue any shares of preferred stock.

### Registration rights

Upon the completion of this offering, the holders of \_\_\_\_\_ shares of our common stock, including those issuable upon the conversion of preferred stock, will be entitled to rights with respect to the registration of these

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securities under the Securities Act. These rights are provided under the terms of our Investor Rights Agreement between us and the holders of our preferred stock. The Investor Rights Agreement includes demand registration rights, short-form registration rights, and piggyback registration rights. All fees, costs and expenses of underwritten registrations under this agreement will be borne by us and all selling expenses, including underwriting discounts and selling commissions, will be borne by the holders of the shares being registered.

### ***Demand registration rights***

Beginning six months after the completion of this offering, the holders of \_\_\_\_\_ shares of our common stock, including those issuable upon the conversion of shares of our preferred stock upon closing of this offering, will be entitled to demand registration rights. Under the terms of the Investor Rights Agreement, we will be required, upon the written request of a majority of holders of the registrable securities then outstanding that would result in an aggregate offering price of at least \$10.0 million, to file a registration statement and to use commercially reasonable efforts to effect the registration of all or a portion of these shares for public resale.

### ***Short-form registration rights***

Upon the completion of this offering, the holders of \_\_\_\_\_ shares of our common stock, including those issuable upon the conversion of shares of our preferred stock upon closing of this offering, are also entitled to short-form registration rights. Pursuant to the Investor Rights Agreement, if we are eligible to file a registration statement on Form S-3, upon the written request of at least 20% in interest of these holders to sell registrable securities at an aggregate price of at least \$3.0 million, we will be required to use commercially reasonable efforts to effect a registration of such shares. We are required to effect only two registrations in any twelve-month period pursuant to this provision of the investor rights agreement.

### ***Piggyback registration rights***

Upon the completion of this offering, the holders of \_\_\_\_\_ shares of our common stock, including those issuable upon the conversion of shares of our preferred stock upon closing of this offering, are entitled to piggyback registration rights. If we register any of our securities either for our own account or for the account of other security holders, the holders of these shares are entitled to include their shares in the registration. Subject to certain exceptions contained in the Investor Rights Agreement, we and the underwriters may limit the number of shares included in the underwritten offering to the number of shares which we and the underwriters determine in our sole discretion will not jeopardize the success of the offering.

### ***Indemnification***

Our investor rights agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable securities in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them.

### ***Expiration of registration rights***

The demand registration rights and short-form registration rights granted under the Investor Rights Agreement will terminate on the fifth anniversary of the completion of this offering.

### ***Anti-takeover effects of our certificate of incorporation and bylaws and Delaware Law***

Our certificate of incorporation and bylaws include a number of provisions that may have the effect of delaying, deferring or preventing another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

***Board composition and filling vacancies***

Our certificate of incorporation provides for the division of our board of directors into three classes serving staggered three-year terms, with one class being elected each year. Our certificate of incorporation also provides that directors may be removed only for cause and then only by the affirmative vote of the holders of two-thirds or more of the shares then entitled to vote at an election of directors. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may only be filled by the affirmative vote of a majority of our directors then in office even if less than a quorum. The classification of directors, together with the limitations on removal of directors and treatment of vacancies, has the effect of making it more difficult for stockholders to change the composition of our board of directors.

***No written consent of stockholders***

Our certificate of incorporation provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting. This limit may lengthen the amount of time required to take stockholder actions and would prevent the amendment of our bylaws or removal of directors by our stockholders without holding a meeting of stockholders.

***Meetings of stockholders***

Our certificate of incorporation and bylaws provide that only a majority of the members of our board of directors then in office may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our bylaws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

***Advance notice requirements***

Our bylaws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. Our bylaws specify the requirements as to form and content of all stockholders' notices. These requirements may preclude stockholders from bringing matters before the stockholders at an annual or special meeting.

***Amendment to certificate of incorporation and bylaws***

Any amendment of our certificate of incorporation must first be approved by a majority of our board of directors, and if required by law or our certificate of incorporation, must thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment and a majority of the outstanding shares of each class entitled to vote thereon as a class, except that the amendment of the provisions relating to stockholder action, board composition, and limitation of liability must be approved by not less than two-thirds of the outstanding shares entitled to vote on the amendment, and not less than two-thirds of the outstanding shares of each class entitled to vote thereon as a class. Our bylaws may be amended by the affirmative vote of a majority of the directors then in office, subject to any limitations set forth in the bylaws; and may also be amended by the affirmative vote of a majority of the outstanding shares entitled to vote on the amendment, voting together as a single class, except that the amendment of the provisions relating to notice of stockholder business and nominations and special meetings must be approved by not less than two-thirds of the outstanding shares entitled to vote on the amendment, and not less than two-thirds of the outstanding shares of each class entitled to vote

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thereon as a class, or, if our board of directors recommends that the stockholders approve the amendment, by the affirmative vote of the majority of the outstanding shares entitled to vote on the amendment, in each case voting together as a single class.

### ***Undesignated preferred stock***

Upon the completion of this offering, our certificate of incorporation will provide for \_\_\_\_\_ authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

### **Choice of Forum**

Our by-laws provide that, unless we consent in writing to the selection of an alternative form, the Court of Chancery of the State of Delaware (or, if the Chancery Court does not have jurisdiction, the federal district court for the District of Delaware or other state courts of the State of Delaware) will be the sole and exclusive forum for: (1) any derivative action or proceeding brought on our behalf; (2) any action asserting a claim of breach of a fiduciary duty or other wrongdoing by any of our directors, officers, employees or agents to us or our stockholders; (3) any action asserting a claim against us arising pursuant to any provision of the General Corporation Law of the State of Delaware or our certificate of incorporation or by-laws (including the interpretation, validity or enforceability thereof) or (4) any action asserting a claim governed by the internal affairs doctrine. Our by-laws of incorporation also provide that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock will be deemed to have notice of and to have consented to this choice of forum provision. It is possible that a court of law could rule that the choice of forum provision contained in our restated certificate of incorporation is inapplicable or unenforceable if it is challenged in a proceeding or otherwise.

In addition, our by-laws provide that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States will be the exclusive forum for any private action asserting violations by us or any of our directors or officers of the Securities Act or the Exchange Act, or the rules and regulations promulgated thereunder, and of all suits in equity and actions at law brought to enforce any liability or duty created by those statutes or the rules and regulations under such statutes. If any action the subject matter of which is within the scope of the preceding sentence is filed in a court other than the federal district courts of the United States, the plaintiff or plaintiffs shall be deemed by this provision of the bylaws (i) to have consented to removal of the action by us to the federal district courts of the United States, in the case of an action filed in a state court, and (ii) to have consented to transfer of the action to the federal district courts of the United States

We recognize that the Delaware Forum Provision in our bylaws may impose additional litigation costs on stockholders in pursuing any such claims, particularly if the stockholders do not reside in or near the State of Delaware. Additionally, the forum selection clauses in our amended and restated bylaws may limit our stockholders' ability to bring a claim in a forum that they find favorable for disputes with us or our directors, officers or employees, which may discourage such lawsuits against us and our directors, officers and employees even though an action, if successful, might benefit our stockholders. In addition, while the Delaware Supreme Court ruled in March 2020 that federal forum selection provisions purporting to require claims under the

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Securities Act be brought in federal court were “facially valid” under Delaware law, there is uncertainty as to whether other courts will enforce our Federal Forum Provision. If the Federal Forum Provision is found to be unenforceable, we may incur additional costs associated with resolving such matters. The Federal Forum Provision may also impose additional litigation costs on stockholders who assert that the provision is not enforceable or invalid. The Court of Chancery of the State of Delaware and the federal district courts of the United States may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our stockholders.

### **Section 203 of the Delaware General Corporation Law**

Upon completion of this offering, we will be subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances, but not the outstanding voting stock owned by the interested stockholder; or
- at or after the time the stockholder became interested, the business combination was approved by our board of directors and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, lease, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges, or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

### **Nasdaq Global Market listing**

We intend to apply to list our common stock on The Nasdaq Global Market under the trading symbol “IKNA.”



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**Transfer agent and registrar**

The transfer agent and registrar for our common stock will be number is .

. The transfer agent and registrar's address is , and its telephone

## SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our shares. Future sales of our common stock in the public market, or the availability of such shares for sale in the public market, could adversely affect market prices prevailing from time to time. As described below, only a limited number of shares will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nevertheless, sales of our common stock in the public market after such restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price at such time and our ability to raise equity capital in the future.

Based on the number of shares outstanding as of December 31, 2020, upon the completion of this offering, \_\_\_\_\_ shares of our common stock will be outstanding, assuming no exercise of the underwriters' option to purchase additional shares and no exercise of outstanding options. Of the outstanding shares, all of the shares sold in this offering will be freely tradable, except that any shares held by our affiliates, as that term is defined in Rule 144 under the Securities Act, may only be sold in compliance with the limitations described below, and \_\_\_\_\_ shares of our common stock are restricted shares of common stock subject to time-based vesting terms.

### Rule 144

In general, a person who has beneficially owned restricted stock for at least six months would be entitled to sell their securities provided that (i) such person is not deemed to have been one of our affiliates at the time of, or at any time during the 90 days preceding, a sale and (ii) we are subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Persons who have beneficially owned restricted shares for at least six months but who are our affiliates at the time of, or any time during the 90 days preceding, a sale, would be subject to additional restrictions, by which such person would be entitled to sell within any three-month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares then outstanding, which will equal approximately \_\_\_\_\_ shares immediately after this offering assuming no exercise of the underwriters' option to purchase additional shares, based on the number of shares outstanding as of December 31, 2020; or
- the average weekly trading volume of our common stock on The Nasdaq Global Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale;

provided, in each case, that we are subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Such sales both by affiliates and by non-affiliates must also comply with the manner of sale, current public information and notice provisions of Rule 144.

### Rule 701

Rule 701 under the Securities Act, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with certain restrictions of Rule 144, including the holding period requirement. Most of our employees, executive officers, or directors who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the effectiveness of the registration statement of which this prospectus forms a part before selling their shares. However, substantially all Rule 701 shares are subject to lock-up agreements as described below and under "Underwriting" included elsewhere in this prospectus and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

### Lock-Up Agreements

We, all of our directors and executive officers, and the holders of substantially all of our capital stock and securities convertible into or exchangeable for our capital stock have entered into lock-up agreements with the

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underwriters and/or are subject to market standoff agreements or other agreements with us, which prevents them from selling any of our common stock or any securities convertible into or exercisable or exchangeable for common stock for a period of not less than 180 days from the date of this prospectus without the prior written consent of the representatives, subject to certain exceptions. See the section entitled “Underwriting” appearing elsewhere in this prospectus for more information.

### **Registration rights**

Upon completion of this offering, certain holders of our securities will be entitled to various rights with respect to registration of their shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming fully tradable without restriction under the Securities Act immediately upon the effectiveness of the registration statement. See the section entitled “Description of Capital Stock—Registration rights” appearing elsewhere in this prospectus for more information.

### **Equity incentive plans**

We intend to file one or more registration statements on Form S-8 under the Securities Act to register our shares issued or reserved for issuance under our equity incentive plans. The first such registration statement is expected to be filed soon after the date of this prospectus and will automatically become effective upon filing with the SEC. Accordingly, shares registered under such registration statement will be available for sale in the open market, unless such shares are subject to vesting restrictions with us or the lock-up restrictions described above.

**MATERIAL U.S. FEDERAL INCOME TAX  
CONSIDERATIONS FOR NON-U.S. HOLDERS OF COMMON STOCK**

The following discussion is a summary of material U.S. federal income tax considerations applicable to non-U.S. holders (as defined below) with respect to their ownership and disposition of shares of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. For purposes of this discussion, a non-U.S. holder means a beneficial owner of our common stock that is, for U.S. federal income tax purposes:

- a non-resident alien individual;
- a corporation or any other organization taxable as a corporation for U.S. federal income tax purposes that is created or organized in or under laws other than the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is not subject to U.S. federal income tax on a net income basis; or
- a trust that (1) (a) has not made an election to be treated as a U.S. person under applicable U.S. Treasury regulations and (b) either (i) is not subject to the primary supervision of a court within the United States or (ii) is not subject to the substantial control of one or more U.S. persons or (2) the income of which is not subject to U.S. federal income tax on a net income basis .

This discussion does not address the tax treatment of partnerships or other entities or arrangements that are treated as pass-through entities for U.S. federal income tax purposes or persons that hold their shares of our common stock through partnerships or such other pass-through entities. The tax treatment of a partner in a partnership or other entity or arrangement that is treated as a pass-through entity for U.S. federal income tax purposes generally will depend upon the status of the partner and the activities of the partnership. A partner in a partnership or an investor in any other pass-through entity that will hold our common stock should consult his, her or its tax advisor regarding the tax consequences of acquiring, holding and disposing of our common stock through a partnership or other pass-through entity, as applicable.

This discussion is based on current provisions of the Code, existing and proposed U.S. Treasury regulations promulgated thereunder, current administrative rulings and judicial decisions, all as in effect as of the date of this prospectus and, all of which are subject to change or to differing interpretation, possibly with retroactive effect. Any such change or differing interpretation could alter the tax consequences to non-U.S. holders described in this prospectus. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance that the IRS will not challenge one or more of the tax consequences described herein. We assume in this discussion that a non-U.S. holder holds shares of our common stock as a “capital asset” within the meaning of Section 1221 of the Code, which is generally property held for investment.

This discussion does not address all aspects of U.S. federal income taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder’s individual circumstances, including the alternative minimum tax, the Medicare tax on net investment income, the rules relating to “qualified small business stock,” any U.S. federal tax other than the income tax (including, for example, the estate or gift tax), or any aspects of U.S. state, local or non-U.S. taxes. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as:

1. insurance companies;
2. tax-exempt or governmental organizations;
3. financial institutions;
4. brokers or dealers in securities;
5. regulated investment companies;

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6. pension plans;
7. “controlled foreign corporations,” “passive foreign investment companies,” and corporations that accumulate earnings to avoid U.S. federal income tax;
8. “qualified foreign pension funds,” or entities wholly owned by a “qualified foreign pension fund”;
9. persons deemed to sell our common stock under the constructive sale provisions of the Code;
10. persons that hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment;
11. persons that hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation; and
12. U.S. expatriates.

This discussion is for general information only and is not tax advice. Accordingly, all prospective non-U.S. holders of our common stock should consult their tax advisors with respect to the U.S. federal, state, local, estate and non-U.S. tax consequences of the purchase, ownership and disposition of our common stock.

### **Distributions on our common stock**

As described in the “Dividend Policy” section above, we do not intend to pay any dividends in cash or property on our common stock to our stockholders stock in the foreseeable future. Distributions of cash or property, if any, on shares of our common stock generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a return of the non-U.S. holder’s investment, up to such holder’s adjusted tax basis in the shares of common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below in “Gain on sale, exchange or other taxable disposition of shares of our common stock.” Any such distributions will also be subject to the discussion below under the section titled “Withholding and information reporting requirements—FATCA.”

Subject to the discussion in the following two paragraphs in this section, dividends paid to a non-U.S. holder generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends or such lower rate specified by an applicable income tax treaty between the United States and such holder’s country of residence.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional “branch profits tax” at a 30% rate or such lower rate as specified by an applicable income tax treaty between the United States and such holder’s country of residence.

A non-U.S. holder of shares of our common stock who claims the benefit of an applicable income tax treaty between the United States and such holder’s country of residence generally will be required to provide a properly executed IRS Form W-8BEN or W-8BEN-E (or a successor form) to the applicable withholding agent and satisfy applicable certification and other requirements. Non-U.S. holders are urged to consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty. A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may generally obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim with the IRS.

### **Gain on sale, exchange or other taxable disposition of shares of our common stock**

Subject to the discussion below under “Withholding and information reporting requirements—FATCA,” a non-U.S. holder generally will not be subject to any U.S. federal income tax on any gain realized upon such holder’s sale, exchange or other taxable disposition of shares of our common stock unless:

1. the gain is effectively connected with the non-U.S. holder’s conduct of a U.S. trade or business and, if an applicable income tax treaty so provides, is attributable to a permanent establishment or a fixed-base maintained by such non-U.S. holder in the United States, in which case the non-U.S. holder generally will be taxed on a net income basis at the graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code) and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above in “Distributions on our common stock” also may apply;
2. the non-U.S. holder is a nonresident alien individual who is present in the United States for a period or periods aggregating 183 days or more in the taxable year of the disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder’s country of residence) on the net gain derived from the disposition, which may be offset by certain U.S. source capital losses of the non-U.S. holder, if any (even though the individual is not considered a resident of the United States), provided that the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses; or
3. we are, or have been, at any time during the five-year period preceding such sale or other taxable disposition (or the non-U.S. holder’s holding period, if shorter) a “U.S. real property holding corporation,” unless our common stock is regularly traded on an established securities market, within the meaning of the relevant provisions of the Code, and the non-U.S. holder holds no more than 5% of our outstanding common stock, directly or indirectly, actually or constructively, during the shorter of the five-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. Generally, a corporation is a “U.S. real property holding corporation” only if the fair market value of its “U.S. real property interests” (as defined in the Code and applicable U.S. Treasury regulations) equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we do not believe that we are, or have been, a “U.S. real property holding corporation” for U.S. federal income tax purposes, or that we are likely to become one in the future. No assurance can be provided that our common stock will be regularly traded on an established securities market for purposes of the rules described above.

### **Backup withholding and information reporting**

We must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions on shares of our common stock paid to such holder and the tax withheld, if any, with respect to such distributions. Non-U.S. holders may have to comply with specific certification procedures to establish that the holder is not a United States person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on shares of our common stock. Generally, a non-U.S. holder will comply with such procedures if it provides a properly executed IRS Form W-8BEN or W-8BEN-E (or other applicable IRS Form W-8), or otherwise meets documentary evidence requirements for establishing that it is a non-U.S. holder, or otherwise establishes an exemption. Dividends paid to non-U.S. holders subject to withholding of U.S. federal income tax, as described above in “Distributions on our common stock,” generally will be exempt from U.S. backup withholding.

Information reporting and backup withholding will generally apply to the proceeds of a disposition of shares of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or non-U.S., unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment

of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their tax advisors regarding the application of the information reporting and backup withholding rules to them. Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder's U.S. federal income tax liability, if any, provided that an appropriate claim is filed with the IRS in a timely manner.

#### **Withholding and information reporting requirements—FATCA**

The Foreign Account Tax Compliance Act, or FATCA, generally imposes a U.S. federal withholding tax at a rate of 30% on payments of dividends on our common stock paid to a foreign entity unless (i) if the foreign entity is a "foreign financial institution," such foreign entity undertakes certain due diligence, reporting, withholding, and certification obligations, (ii) if the foreign entity is not a "foreign financial institution," such foreign entity identifies certain of its U.S. investors, if any, or (iii) the foreign entity is otherwise exempt under FATCA. Such withholding may also apply to payments of gross proceeds of sales or other dispositions of shares of our common stock, although under proposed U.S. Treasury regulations (the preamble to which specifies that taxpayers, including withholding agents, are generally permitted to rely on them pending finalization), no withholding will apply to payments of gross proceeds. Under certain circumstances, a non-U.S. holder may be eligible for refunds or credits of this withholding tax. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this paragraph. Non-U.S. holders should consult their tax advisors regarding the possible implications of this legislation on their investment in our common stock and the entities through which they hold our shares of common stock, including, without limitation, the process and deadlines for meeting the applicable requirements to prevent the imposition of the 30% withholding tax under FATCA.

## UNDERWRITING

Subject to the terms and conditions set forth in the underwriting agreement, dated \_\_\_\_\_, 2021, among us and Jefferies LLC, Cowen and Company, LLC, Credit Suisse Securities (USA) LLC and William Blair & Company, L.L.C., as the representatives of the underwriters in this offering named below, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the respective number of shares of common stock shown opposite its name below:

<u>Underwriter</u>	<u>Number of Shares</u>
Jefferies LLC	
Cowen and Company, LLC	
Credit Suisse Securities (USA) LLC	
William Blair & Company, L.L.C.	
Total	

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the shares of common stock if any of them are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated. We have agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

The underwriters have advised us that, following the completion of this offering, they currently intend to make a market in the common stock as permitted by applicable laws and regulations. However, the underwriters are not obligated to do so, and the underwriters may discontinue any market-making activities at any time without notice in their sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the common stock, that you will be able to sell any of the common stock held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriters are offering the shares of common stock subject to their acceptance of the shares of common stock from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part. In addition, the underwriters have advised us that they do not intend to confirm sales to any account over which they exercise discretionary authority.

### Commission and Expenses

The underwriters have advised us that they propose to offer the shares of common stock to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers, which may include the underwriters, at that price less a concession not in excess of \$ \_\_\_\_\_ per share of common stock. The underwriters may allow, and certain dealers may reallow, a discount from the concession not in excess of \$ \_\_\_\_\_ per share of common stock to certain brokers and dealers. After the offering, the initial public offering price, concession and reallowance to dealers may be reduced by the representatives. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus.



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The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Per Share		Total	
	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares
Public offering price	\$	\$	\$	\$
Underwriting discounts and commissions paid by us	\$	\$	\$	\$
Proceeds to us, before expenses	\$	\$	\$	\$

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately \$ . We have also agreed to pay the filing fees incident to, and the fees and disbursements of counsel for the underwriters in connection with, the required review by the Financial Industry Regulatory Authority, Inc. in an amount up to \$ .

### **Determination of Offering Price**

Prior to this offering, there has not been a public market for our common stock. Consequently, the initial public offering price for our common stock will be determined by negotiations between us and the representatives. Among the factors to be considered in these negotiations will be prevailing market conditions, our financial information, market valuations of other companies that we and the underwriters believe to be comparable to us, estimates of our business potential, the present state of our development and other factors deemed relevant.

We offer no assurances that the initial public offering price will correspond to the price at which the common stock will trade in the public market subsequent to the offering or that an active trading market for the common stock will develop and continue after the offering.

### **Listing**

We intend to apply to list our common stock on The Nasdaq Global Market under the trading symbol "IKNA."

### **Option to Purchase Additional Shares**

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase, from time to time, in whole or in part, up to an aggregate of shares from us at the public offering price set forth on the cover page of this prospectus, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional shares proportionate to that underwriter's initial purchase commitment as indicated in the table above. This option may be exercised only if the underwriters sell more shares than the total number set forth on the cover page of this prospectus.

### **No Sales of Similar Securities**

We, our officers, directors and holders of all or substantially all our outstanding capital stock and other securities have agreed, subject to specified exceptions, not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open "put equivalent position" within the meaning of Rule 16a-1(h) under the Securities Exchange Act of 1934, as amended; or

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- otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially; or
- publicly announce an intention to do any of the foregoing for a period of 180 days after the date of this prospectus without the prior written consent of certain of the representatives.

This restriction terminates after the close of trading of the common stock on and including the 180th day after the date of this prospectus

Certain of the representatives may, together in their sole discretion and at any time or from time to time before the termination of the 180-day period release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our stockholders who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period.

### **Stabilization**

The underwriters have advised us that, pursuant to Regulation M under the Securities Exchange Act of 1934, as amended, certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of the common stock at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve either “covered” short sales or “naked” short sales.

“Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional shares of our common stock in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares of our common stock or purchasing shares of our common stock in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares.

“Naked” short sales are sales in excess of the option to purchase additional shares of our common stock. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of shares of common stock on behalf of the underwriters for the purpose of fixing or maintaining the price of the common stock. A syndicate covering transaction is the bid for or the purchase of shares of common stock on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. Similar to other purchase transactions, the underwriter’s purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the common stock originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

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The underwriters may also engage in passive market making transactions in our common stock on The Nasdaq Global Market in accordance with Rule 103 of Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded.

### **Electronic Distribution**

A prospectus in electronic format may be made available by e-mail or on the web sites or through online services maintained by one or more of the underwriters or their affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of shares of common stock for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' web sites and any information contained in any other web site maintained by any of the underwriters is not part of this prospectus, has not been approved and/or endorsed by us or the underwriters and should not be relied upon by investors.

### **Other Activities and Relationships**

The underwriters and certain of their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriters and certain of their respective affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses. Jefferies LLC acted as a placement agent in connection with the private placement of our Series B preferred stock and received cash compensation in connection therewith. Affiliates of Cowen and Company, LLC, an underwriter of this offering, beneficially own an aggregate of approximately 1% of our common stock, on an as-converted basis and fully diluted basis, as of December 31, 2020. Such shares were acquired during the sale of our Series B preferred stock in December 2020.

In the ordinary course of their various business activities, the underwriters and certain of their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own accounts and for the accounts of their respective customers, and such investment and securities activities may involve securities and/or instruments issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

### **Selling Restrictions**

#### ***Canada***

##### *Resale Restrictions*

The distribution of shares of our common stock in Canada is being made only in the provinces of Ontario, Quebec, Alberta and British Columbia on a private placement basis exempt from the requirement that we prepare

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and file a prospectus with the securities regulatory authorities in each province where trades of these securities are made. Any resale of the shares of common stock in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the securities.

### *Representations of Canadian Purchasers*

By purchasing shares of our common stock in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us and the dealer from whom the purchase confirmation is received that:

- the purchaser is entitled under applicable provincial securities laws to purchase the shares of common stock without the benefit of a prospectus qualified under those securities laws as it is an “accredited investor” as defined under National Instrument 45-106—*Prospectus Exemptions*,
- the purchaser is a “permitted client” as defined in National Instrument 31-103—*Registration Requirements, Exemptions and Ongoing Registrant Obligations*,
- where required by law, the purchaser is purchasing as principal and not as agent, and
- the purchaser has reviewed the text above under Resale Restrictions.

### *Conflicts of Interest*

Canadian purchasers are hereby notified that the underwriters are relying on the exemption set out in section 3A.3 or 3A.4, if applicable, of National Instrument 33-105—*Underwriting Conflicts* from having to provide certain conflict of interest disclosure in this prospectus.

### *Statutory Rights of Action*

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if the prospectus (including any amendment thereto) such as this prospectus contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser’s province or territory. The purchaser of these securities in Canada should refer to any applicable provisions of the securities legislation of the purchaser’s province or territory for particulars of these rights or consult with a legal advisor.

### *Enforcement of Legal Rights*

All of our directors and officers as well as the experts named herein may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

### *Taxation and Eligibility for Investment*

Canadian purchasers of our shares of common stock should consult their own legal and tax advisors with respect to the tax consequences of an investment in the shares in their particular circumstances and about the eligibility of the shares for investment by the purchaser under relevant Canadian legislation.

### **Australia**

This prospectus is not a disclosure document for the purposes of Australia’s Corporations Act 2001 (Cth) of Australia, or Corporations Act, has not been lodged with the Australian Securities & Investments Commission

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and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus in Australia:

You confirm and warrant that you are either:

- a “sophisticated investor” under section 708(8)(a) or (b) of the Corporations Act;
- a “sophisticated investor” under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant’s certificate to the company which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made; or
- a “professional investor” within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor or professional investor under the Corporations Act any offer made to you under this prospectus is void and incapable of acceptance.

You warrant and agree that you will not offer any of the shares issued to you pursuant to this prospectus for resale in Australia within 12 months of those securities being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

### ***European Economic Area and United Kingdom***

In relation to each member state of the European Economic Area, each referred to herein as a Relevant State, no offer of any securities which are the subject of the offering contemplated by this prospectus has been or will be made to the public in that Relevant State other than any offer where a prospectus has been or will be published in relation to such securities that has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the relevant competent authority in that Relevant State in accordance with the Prospectus Regulation, except that an offer of such securities may be made to the public in that Relevant State at any time under the following exemptions under the Prospectus Regulation:

- to any legal entity which is a “qualified investor” as defined in Article 2(e) of the Prospectus Regulation;
- to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Regulation), as permitted under the Prospectus Regulation, subject to obtaining the prior consent of the representatives of the underwriters for any such offer; or
- in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of securities shall require the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this provision, the expression an “offer to the public” in relation to any securities in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and the securities to be offered so as to enable an investor to decide to purchase or subscribe the securities, and the expression “Prospectus Regulation” means Regulation (EU) 2017/1129 (as amended).

This European Economic Area selling restriction is in addition to any other selling restrictions set out below.

### ***PRC***

This prospectus has not been and will not be circulated or distributed in the PRC, and no securities may be offered or sold, or will be offered or sold, to any person for re-offering or resale, directly or indirectly, to any resident of the PRC except pursuant to applicable laws and regulations of the PRC.

### ***Hong Kong***

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to “professional investors” as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong, or SFO, and any rules made under that Ordinance; or in other circumstances which do not result in the document being a “prospectus” as defined in the Companies Ordinance (Cap. 32) of Hong Kong, or CO, or which do not constitute an offer to the public for the purpose of the CO or the SFO. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” as defined in the SFO and any rules made under that Ordinance.

This prospectus has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

### ***Israel***

This prospectus does not constitute a prospectus under the Israeli Securities Law, 5728-1968, or the Securities Law, and has not been filed with or approved by the Israel Securities Authority. In the State of Israel, this prospectus is being distributed only to, and is directed only at, and any offer of the shares is directed only at, (i) a limited number of persons in accordance with section 15A of the Securities Law and (ii) investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and “qualified individuals”, each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case purchasing for their own accounts or, where permitted under the Addendum, for the accounts of their respective clients who are investors listed in the Addendum). Qualified investors will be required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

### ***Japan***

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended), or FIEL, and the Initial Purchaser will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means, unless otherwise provided herein, any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

### ***Singapore***

This prospectus has not been and will not be lodged or registered with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or the invitation for subscription or purchase of the securities may not be issued, circulated or distributed, nor may the

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securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to the public or any member of the public in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person as defined under Section 275(2), or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions, specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of any other applicable provision of the SFA.

Where the securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor as defined under Section 4A of the SFA) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares of common stock pursuant to an offer made under Section 275 of the SFA except:

- to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- where no consideration is or will be given for the transfer;
- where the transfer is by operation of law;
- as specified in Section 276(7) of the SFA; or
- as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

### **Switzerland**

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this prospectus nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, the Company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

***United Kingdom***

This prospectus is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(e) of the Prospectus Regulation that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, referred to herein as the Order, and/or (ii) high net worth entities falling within Article 49(2)(a) to (d) of the Order and other persons to whom it may lawfully be communicated. Any investment or investment activity to which this prospectus relates is available only to relevant persons and will only be engaged in with relevant persons. Any person who is not a relevant person should not act or rely on this prospectus or any of its contents.



## LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts. Certain legal matters related to this offering will be passed upon for the underwriters by Wilmer Cutler Pickering Hale and Dorr LLP, New York, New York.

## EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements at December 31, 2018 and December 31, 2019, and for each of the two years in the period ended December 31, 2019, as set forth in their report. We have included our financial statements in the prospectus and elsewhere in the registration statement in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 (File Number 333- ) under the Securities Act with respect to the common stock we are offering by this prospectus. This prospectus does not contain all of the information included in the registration statement. For further information pertaining to us and our common stock, you should refer to the registration statement and to its exhibits. Whenever we make reference in this prospectus to any of our contracts, agreements or other documents, the references are not necessarily complete, and you should refer to the exhibits attached to the registration statement for copies of the actual contract, agreement or other document.

Upon the completion of this offering, we will be subject to the informational requirements of the Exchange Act and will file annual, quarterly and current reports, proxy statements and other information with the SEC. You can read our SEC filings, including the registration statement, at the SEC's website at [www.sec.gov](http://www.sec.gov). We also maintain a website at [www.ikenaoncology.com](http://www.ikenaoncology.com). Upon completion of this offering, you may access, free of charge, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendment to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC.

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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Stockholders and the Board of Directors of Ikena Oncology, Inc.

**Opinion on the Financial Statements**

We have audited the accompanying consolidated balance sheets of Ikena Oncology, Inc. (the Company) as of December 31, 2018 and 2019, and the related consolidated statements of operations and comprehensive loss, redeemable convertible preferred stock and stockholders' deficit and cash flows for the years then ended, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2019, and the results of its operations and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

**Basis for Opinion**

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst and Young LLP

We have served as the Company's auditor since 2019.

Boston, Massachusetts  
January 8, 2021

## IKENA ONCOLOGY, INC.

Consolidated Balance Sheets  
(in thousands, except share and per share amounts)

	December 31,	
	2018	2019
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 18,156	\$ 82,083
Prepaid expenses and other current assets	1,824	3,122
Total current assets	19,980	85,205
Property and equipment, net	696	769
Total assets	<u>\$ 20,676</u>	<u>\$ 85,974</u>
<b>Liabilities, Redeemable Convertible Preferred Stock and Stockholders' Deficit</b>		
Current liabilities:		
Accounts payable	\$ 2,267	\$ 935
Accrued expenses and other current liabilities	1,557	2,679
Deferred revenue	—	20,683
Total current liabilities	3,824	24,297
Deferred rent, net of current portion	116	—
Deferred revenue, net of current portion	—	44,273
Total liabilities	3,940	68,570
Commitments and contingencies (Note 14)		
Redeemable convertible preferred stock (Series A and A-1), \$0.001 par value, 61,181,818 shares authorized, issued and outstanding (liquidation preference of \$61,181,818) as of December 31, 2018 and 75,727,268 shares authorized, issued and outstanding (liquidation preference \$75,727,268) as of December 31, 2019	62,576	78,867
Stockholders' deficit:		
Common stock, \$0.001 par value; 90,909,088 shares authorized, 18,818,179 issued and outstanding as of December 31, 2018 and 113,372,392 shares authorized, 18,967,681 issued and outstanding as of December 31, 2019	19	19
Additional paid-in capital	4,407	5,601
Accumulated deficit	(50,266)	(67,083)
Total stockholders' deficit	(45,840)	(61,463)
Total liabilities, redeemable convertible preferred stock and stockholders' deficit	<u>\$ 20,676</u>	<u>\$ 85,974</u>

The accompanying notes are an integral part of these consolidated financial statements.

## IKENA ONCOLOGY, INC.

Consolidated Statements of Operations and Comprehensive Loss  
(in thousands, except share and per share amounts)

	Year Ended December 31,	
	2018	2019
<b>Revenue</b>		
Research and development revenue under collaboration agreement	\$ —	\$ 13,753
Service revenue (related party)	990	—
Total revenue	990	13,753
<b>Operating expenses</b>		
Research and development	38,986	24,938
General and administrative	2,898	7,307
Total operating expenses	41,884	32,245
Loss from operations	(40,894)	(18,492)
Other income	29	1,675
Net loss and comprehensive loss	\$ (40,865)	\$ (16,817)
Net loss per share attributable to common stockholders, basic and diluted	\$ (3.35)	\$ (0.89)
Weighted-average shares of common stock outstanding, basic and diluted	12,193,711	18,945,673

The accompanying notes are an integral part of these consolidated financial statements.

**IKENA ONCOLOGY, INC.**
**Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' Deficit**  
**(in thousands, except share amounts)**

	Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount			
<b>Balance at December 31, 2017</b>	28,000,000	\$27,832	11,250,000	\$ 11	\$ 83	\$ (9,401)	\$ (9,307)
Issuance of preferred stock in connection with the acquisition of Arrys Therapeutics, Inc.	33,181,818	34,744	—	—	—	—	—
Issuance of common stock in connection with the acquisition of Arrys Therapeutics, Inc.	—	—	6,818,179	7	4,011	—	4,018
Vesting of restricted common stock	—	—	750,000	1	—	—	1
Stock-based compensation	—	—	—	—	313	—	313
Net loss and comprehensive loss	—	—	—	—	—	(40,865)	(40,865)
<b>Balance at December 31, 2018</b>	61,181,818	62,576	18,818,179	19	4,407	(50,266)	(45,840)
Issuance of preferred stock in connection with private placement	14,545,450	16,291	—	—	—	—	—
Exercise of stock options	—	—	149,502	—	25	—	25
Stock-based compensation	—	—	—	—	1,169	—	1,169
Net loss and comprehensive loss	—	—	—	—	—	(16,817)	(16,817)
<b>Balance at December 31, 2019</b>	75,727,268	\$78,867	18,967,681	\$ 19	\$ 5,601	\$ (67,083)	\$ (61,463)

The accompanying notes are an integral part of these consolidated financial statements.

## IKENA ONCOLOGY, INC.

Consolidated Statements of Cash Flows  
(in thousands)

	Year Ended December 31, 2018	2019
<b>Cash flows from operating activities</b>		
Net loss	\$(40,865)	\$(16,817)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities		
Depreciation	179	243
Stock-based compensation	314	1,169
Non-cash research and development expense for in-process research and development acquired in acquisition	28,463	—
Non-cash rent expense	243	(121)
Changes in operating assets and liabilities		
Prepaid expenses and other current assets	(990)	(1,297)
Accounts payable	602	(1,332)
Accrued expenses and other current liabilities	446	1,126
Deferred revenue	—	64,956
Net cash flows (used in) provided by operating activities	<u>(11,608)</u>	<u>47,927</u>
<b>Cash flows from investing activities</b>		
Cash obtained in asset acquisition	11,274	—
Purchases of property and equipment	(305)	(316)
Net cash flows provided by (used in) investing activities	<u>10,969</u>	<u>(316)</u>
<b>Cash flows from financing activities</b>		
Proceeds from issuance of preferred stock in connection with private placement	—	16,291
Proceeds from exercise of stock options	—	25
Net cash flows provided by financing activities	<u>—</u>	<u>16,316</u>
Net (decrease) increase in cash and cash equivalents	(639)	63,927
Cash and cash equivalents, beginning of year	18,795	18,156
Cash and cash equivalents, end of year	<u>\$ 18,156</u>	<u>\$ 82,083</u>
<b>Supplemental disclosure of non-cash activities</b>		
Assets obtained in asset acquisition	\$ 219	\$ —
Liabilities assumed in asset acquisition	\$ 911	\$ —
Fair value of equity instruments issued in connection with asset acquisition	\$ 38,762	\$ —
Vesting of restricted common stock	\$ 1	\$ —
Transaction costs for asset acquisition in accounts payable	\$ 213	\$ —

The accompanying notes are an integral part of these consolidated financial statements.

**IKENA ONCOLOGY, INC.**

**Notes to Consolidated Financial Statements**

**Note 1. Description of Business**

The Company is a targeted oncology company focused on developing novel cancer therapies targeting key signaling pathways that drive the formation and spread of cancer. The Company's programs focus on key cancer driver pathways that are well-validated in scientific literature but lack approved or effective therapies and therefore have the potential to address high unmet medical needs. By leveraging the Company's deep understanding of discovery chemistry, translational science, and patient-centric drug development, it has built a deep pipeline of wholly owned and partnered programs focused on genetically defined or biomarker-driven cancers, which enables it to target specific patient populations that the Company believes are most likely to respond to treatment with its product candidates. Since the Company commenced operations in 2016, it has discovered or developed five oncology programs that include four product candidates in either IND-enabling studies or clinical development.

The Company is subject to risks and uncertainties common to early-stage companies in the biotechnology industry, including, but not limited to, development by competitors of new technological innovations, dependence on key personnel, protection of proprietary technology, compliance with government regulations and ability to secure additional capital to fund operations. Product candidates currently under development will require significant additional research and development efforts, including extensive preclinical and clinical testing and regulatory approval prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel and infrastructure and extensive compliance-reporting capabilities. Because of the numerous risks and uncertainties associated with product development, the Company is unable to predict the timing or amount of increased expenses or when or if the Company will be able to achieve or maintain profitability. Even if the Company is able to generate revenue from product sales, the Company may not become profitable. If the Company fails to become profitable or is unable to sustain profitability on a continuing basis, then the Company may be unable to continue its operations at planned levels and be forced to reduce or terminate its operations. The Company expects to incur substantial operating losses and negative cash flows from operations for the foreseeable future.

In accordance with Accounting Standards Codification ("ASC") 205-40, *Going Concern*, the Company has evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern within one year after the date that the consolidated financial statements are issued. As of December 31, 2019, the Company had an accumulated deficit of \$67.1 million. During the year ended December 31, 2019, the Company incurred a loss of \$16.8 million and provided \$48.0 of cash in operations. The Company expects to continue to generate operating losses in the foreseeable future. The Company expects that its cash and cash equivalents of \$82.1 million at December 31, 2019, together with the \$3.7 million of cash received through the acquisition of Amplify Medicines, Inc. ("Amplify") on October 1, 2020 and the net proceeds of \$116.4 million from the issuance of Series B redeemable convertible preferred stock on December 21, 2020, will be sufficient to fund its operating expenses and capital expenditure requirements for at least the next 12 months from issuance of the consolidated financial statements.

In addition, the Company expects that it will seek additional funding through public or private financings, debt financing, collaboration agreements or government grants. The inability to obtain funding, as and when needed, could have a negative impact on the Company's financial condition and ability to pursue its business strategies, which may include amending, delaying, limiting, reducing, or terminating planned activities related to its product candidates.

**Note 2. Summary of Significant Accounting Policies**

**Basis of Presentation:** The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries, Arrys Therapeutics, Inc. ("Arrys") and Ikena Oncology Securities



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Corporation. All intercompany balances and transactions have been eliminated in consolidation. These consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”). Any reference in these notes to applicable guidance is meant to refer to the authoritative U.S. GAAP as found in the ASC and Accounting Standards Update (“ASU”) of the Financial Accounting Standards Board (“FASB”).

**Use of Estimates:** The preparation of the Company’s financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Estimates and judgments are based on historical information and other market-specific or various relevant assumptions, including in certain circumstances, future projections, that management believes to be reasonable under the circumstances. Actual results could differ materially from estimates. Significant estimates and assumptions are used for, but not limited to the accruals for research and development expenses, research and development revenue under a collaboration agreement, stock-based compensation expense and the determination of fair value of equity instruments and intangible assets acquired in an asset acquisition. The Company utilized various valuation methodologies in accordance with the framework of the 2013 American Institute of Certified Public Accountants Technical Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation*, to estimate the fair value of its equity awards. The Company evaluates its estimates and assumptions on an ongoing basis. All revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

**Segments:** Operating segments are defined as components of an entity for which separate financial information is available and that is regularly reviewed by the Chief Operating Decision Maker (“CODM”) in deciding how to allocate resources to an individual segment and in assessing performance. The Company’s CODM is its Chief Executive Officer. The Company has determined it operates in a single operating segment and has one reportable segment. All long-lived assets of the Company reside in the United States.

**Concentration of Credit Risk and of Significant Suppliers:** Financial instruments that potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents. At December 31, 2019 and 2018, substantially all of the Company’s cash and cash equivalents were deposited at one highly rated financial institution. The Company maintains balances in operating accounts above federally insured limits. The Company has not experienced any losses on such accounts and does not believe it is exposed to any significant credit risk on cash and cash equivalents.

The Company is dependent on third-party manufacturers and clinical research organizations to supply products and provide services for research and development activities in its programs. In particular, the Company relies and expects to continue to rely on a small number of manufacturers to supply it with its requirements for the active pharmaceutical ingredients and formulated drugs related to these programs. These programs could be adversely affected by a significant interruption in the supply of active pharmaceutical ingredients and formulated drugs.

**Fair Value of Financial Instruments:** The amounts reported for cash equivalents, accounts payable and accrued expenses approximate fair value because of their short maturities. Fair value is estimated based on a three-tier fair value hierarchy to prioritize the inputs used in our fair value measurements. These tiers include: Level 1, defined as observable inputs such as quoted prices in active markets for identical assets; Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and Level 3, defined as unobservable inputs in which little or no market data exists, therefore requiring us to develop our own assumptions. The Company recognizes transfers between levels of the fair value hierarchy on the date of the event or change in circumstances that caused the transfer.

**Cash and Cash Equivalents:** The Company considers all short-term, highly liquid investments with original maturities of 90 days or less at acquisition date to be cash equivalents.

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**Property and Equipment:** Property and equipment are recorded at cost and depreciated using the straight-line method over the estimated useful life of each asset. Lab equipment is depreciated over five years. Electronic equipment and software are depreciated over three years. Leasehold improvements are amortized over the shorter of their useful life or lease term. When an item is sold or retired, the costs and related accumulated depreciation are eliminated, and the resulting gain or loss, if any, is credited or charged to income in the statement of operations. Repairs and maintenance costs are expensed as incurred.

**Long-lived Assets:** Long-lived assets consist of property and equipment. The Company reviews the recoverability of its long-lived assets, including the related useful lives, whenever events or changes in circumstances indicate that the carrying amount of a long-lived asset might not be recoverable, based on undiscounted cash flows. If such assets are considered to be impaired, an impairment loss is recognized and is measured as the amount by which the carrying amount of the assets exceed their estimated fair value, which is measured based on the projected discounted future net cash flows arising from the assets.

**Income Taxes:** The Company utilizes the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the carrying amounts and the tax basis of assets and liabilities using the enacted statutory tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Recognition of deferred tax assets is limited to amounts for which, in the opinion of management, realization is considered more likely than not in future periods.

**Revenue Recognition:** The Company has generated revenue from a collaboration agreement as well as service agreements with related parties.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, or Topic 606, which amended the guidance for accounting for revenue from contracts with customers. Under Topic 606, an entity recognizes revenue when its customer obtains control of promised goods or services in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. The Company adopted Topic 606 in 2018.

To determine revenue recognition for arrangements that are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. At contract inception, once the contract is determined to be within the scope of Topic 606, the Company assesses the goods or services promised within each contract and determine those that are performance obligations, then assesses whether each promised good or service is distinct. When the Company offers options for additional goods or services, such as to receive a license for intellectual property or for additional goods or services, the Company evaluates whether such options contain material rights that should be treated as additional performance obligations. Once performance obligations are identified, the Company then recognizes as revenue the amount of the transaction price that the Company allocated to the respective performance obligation when (or as) each performance obligation is satisfied, either at a point in time or over time. If the performance obligation is satisfied over time, the Company recognizes revenue based on the use of an input method.

Amounts received prior to revenue recognition are recorded as deferred revenue. Amounts expected to be recognized as revenue within the 12 months following the balance sheet date are classified as current portion of deferred revenue in the accompanying consolidated balance sheets. Amounts not expected to be recognized as revenue within the 12 months following the balance sheet date are classified as deferred revenue, net of current portion.

As of December 31, 2018, the Company recognized \$1 million of service revenue from related parties for fees associated to services performed by the Company, which was generally based on the cost of providing such services and which may have included a profit margin.

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As of December 31, 2019, the Company had one collaborative agreement with Bristol-Myers Squibb (“BMS”), which the Company entered into in January 2019 (the “BMS Collaboration Agreement”). For a complete discussion of the accounting related to BMS Collaboration Agreement, see Note 8, Collaboration Agreement with BMS.

**Research and Development Expense:** Research and development costs are expensed as incurred. Research and development expenses are comprised of costs incurred in performing research and development activities, including salaries, stock-based compensation and benefits, facilities costs, depreciation, third-party license fees, acquisition of technology, and external costs of outside vendors engaged to conduct preclinical development activities and trials. Research and development expense also includes the write-off of acquired in-process research and development (“IPR&D”) assets with no alternative future use.

**Asset Acquisitions:** In 2018, the Company adopted ASU 2017-01, *Business Combinations (ASU 2017-01)*, which clarified the definition of a business. The Company measures and recognizes asset acquisitions that are not deemed to be business combinations based on the cost to acquire the assets, which includes transaction costs, and the consideration is allocated to the items acquired based on a relative fair value methodology. Goodwill is not recognized in asset acquisitions. In an asset acquisition, the cost allocated to acquire IPR&D with no alternative future use is charged to research and development expense at the acquisition date.

**Stock-based Compensation:** The Company’s stock-based compensation program grants awards that may include stock options, restricted stock awards, restricted stock units, and other stock-based awards. The fair values of stock option grants are estimated as of the date of grant using a Black-Scholes option valuation model. The fair values of restricted stock awards and restricted stock units are based on the fair value of the Company’s common stock on the date of grant. The estimated fair values of the awards are expensed over the requisite service period, which is generally the vesting period of the award. For service-based awards that are subject to graded vesting, companies have the option to recognize compensation expense either on a straight-line or accelerated basis. The Company has elected to recognize compensation expense for these awards on a straight-line basis. The Company accounts for forfeitures as they occur. The Company classifies stock-based compensation expense in our consolidated statements of operations and comprehensive loss in the same manner in which the award recipient’s salary and related costs are classified or in which the award recipient’s service payments are classified.

The Company utilizes significant estimates and assumptions in determining the fair value of its common stock. The Company has utilized various valuation methodologies in accordance with the framework of the American Institute of Certified Public Accountants Technical Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation* (the “Practice Aid”), to estimate the fair value of its common stock. Each valuation methodology includes estimates and assumptions that require the Company’s judgment. These estimates and assumptions include a number of objective and subjective factors, including external market conditions, the superior rights and preferences of securities senior to the Company’s common stock at the time of, and the likelihood of, achieving a liquidity event, such as an initial public offering or sale. Significant changes to the key assumptions used in the valuations could result in different fair values of common stock at each valuation date.

The Company’s expected stock price volatility assumption is based on volatilities of similar entities whose share or option prices are publicly available. The Company uses the simplified method to estimate the expected life assumption. The risk-free interest rate is based on the yield of U.S. Treasury securities consistent with the expected life of the option. No dividend yield was assumed as the Company does not intend to pay dividends on its common stock.

**Comprehensive Loss:** Comprehensive loss includes net loss as well as other changes in stockholders’ equity (deficit) that result from transactions and economic events other than those with stockholders. For the years ended December 31, 2019 and 2018, there were no differences between net loss and comprehensive loss.

**Deferred Issuance Costs:** Deferred issuance costs consist of legal, accounting and other third-party fees that are directly associated with in-process equity financings and remain deferred issuance costs until such financings are consummated. After consummation of the equity financing, these costs are recorded as a reduction to the proceeds generated as a result of the offering. Should the planned equity financing be abandoned, the deferred offering costs will be expensed immediately as a charge to operating expenses in the consolidated statements of operations and comprehensive loss.

**Emerging Growth Company Status:** The Company is an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”). Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such a time as those standards apply to private companies. The Company has elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that the Company no longer is an emerging growth company or affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, these financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

**Recent Accounting Pronouncements:**

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)* (“ASU 2016-02”). The guidance in ASU 2016-02 supersedes the current leasing guidance, which will require lessees to recognize right-of use assets and lease liabilities on the balance sheet for all leases with terms longer than 12 months. As amended, ASU 2016-02 is effective for financial statement periods beginning after December 15, 2021. The Company adopted ASU 2016-02, as amended, by applying the modified retrospective approach for leases existing at, and entered into after, January 1, 2020. The adoption of this standard resulted in the recognition of right-of-use assets and operating lease liabilities of \$1.0 million and \$1.0 million respectively, on the Company’s consolidated balance sheet upon adoption on January 1, 2020.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326)—Measurement of Credit Losses on Financial Instruments*, which has been subsequently amended (“ASU 2016-13”). The provisions of ASU 2016-13 modify the impairment model to utilize an expected loss methodology in place of the currently used incurred loss methodology and require a consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The Company early adopted ASU 2016-13 as of January 1, 2020 and it did not have a significant impact on its financial position or results of operation.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement* (“ASU 2018-13”). The Company adopted ASU 2018-13 as of January 1, 2020 and it did not have a significant impact on its financial position or results of operation.

In August 2018, the FASB issued ASU 2018-15, *Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* (“ASU 2018-15”). The new standard will align the requirements for capitalizing implementation costs for hosting arrangements (services) with costs for internal-use software (assets). As a result, certain implementation costs incurred in hosting arrangements will be deferred and amortized. The Company adopted ASU 2018-15 as of January 1, 2020 and it did not have a significant impact on its financial position or results of operation.

In April 2019, the FASB issued ASU 2019-04, *Codification Improvements to Topic 326, Financial Instruments—Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments* (“ASU 2019-04”). This update provides clarifications for three topics related to financial instruments accounting, some of which apply to the Company. The Company adopted ASU 2019-04 as of January 1, 2020 and it did not have a significant impact on its financial position or results of operation.

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In December 2019, the FASB issued ASU 2019-12, *Income Taxes (Topic 740)* (“ASU 2019-12”) as part of its initiative to reduce complexity in the accounting standards. The amendments in ASU 2019-12 eliminate certain exceptions related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. ASU 2019-12 also clarifies and simplifies other aspects of the accounting for income taxes. The Company adopted ASU 2019-12 effective January 1, 2020 and it did not have a material impact on the Company.

### **Recently Adopted Accounting Pronouncements:**

In November 2016, the FASB issued ASU No. 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash Payments* (“ASU 2016-15”) to clarify how entities should present restricted cash and restricted cash equivalents in their statements of cash flows. Under this new update, entities are required to show the changes in the total of cash, cash equivalents, restricted cash and restricted cash equivalents in their statements of cash flows. The Company adopted ASU 2016-15 in 2019 and there was not a material impact on the consolidated financial statements.

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies and adopted by us as of the specified effective date. Unless otherwise discussed, the Company believes that the impact of recently issued standards that are not yet effective will not have a material impact on our consolidated financial statements and disclosures.

### **Note 3. Arrys Acquisition**

On December 18, 2018 (the “Acquisition Date”), the Company acquired Arrys. Pursuant to the terms and conditions of the Agreement and Plan of Merger (“the Arrys Merger Agreement”), each share of Arrys common and preferred stock, issued and outstanding immediately prior to the Acquisition Date, was cancelled and converted into 1.5801 fully paid and non-assessable shares of the Company’s common stock or Preferred Series A-1 stock, respectively. In addition, each outstanding and unexercised option to acquire Arrys common stock was cancelled and converted into 1.5801 options to acquire the Company’s common stock with a corresponding adjustment to the exercise price. As a result of the Arrys Merger Agreement, the Company issued equity instruments with a total fair value of \$38.8 million consisting of 6,818,179 shares of common stock, 33,181,818 shares of Series A-1 Preferred Stock, and options to purchase 644,713 shares of common stock. In addition, the Company also issued options to purchase 2,218,227 shares of its common stock which were invested at the Acquisition Date. The unvested options require the recipients to perform future services on behalf of the Company in order to vest in the awards. As the unvested options represent payments for future services, they are not considered as part of the initial purchase price consideration and will be expensed as the services are provided consistent with the Company’s stock-based compensation accounting policies.

The Company first assessed if the acquisition represented a transaction which was under common control or common ownership under both the variable interest entity guidance and the voting interest entity guidance. While Arrys is a related party to the Company, it is not under common control or common ownership with the Company. The Company next assessed if Arrys represented an asset or a business under FASB ASC Topic 805, *Business Combinations ASC 805*, as amended by ASU 2017-01. Under ASC 805, the Company determined that Arrys did not constitute a business since substantially all of the fair value of the gross assets acquired is concentrated in a single asset, the intellectual property for the lead product candidate in development by Arrys, which is in Phase 1 clinical trials. The intellectual property acquired from Arrys is at an early stage of development and will require a significant investment of time and capital for development. There is no assurance that the Company will be successful in completing the additional research and development activities. The intellectual property acquired is considered to have no alternative future use, and therefore is expensed as incurred. The total transaction price, which includes consideration issued and the issuance costs of \$284 thousand

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was allocated to the assets acquired and liabilities assumed on a relative fair value basis. The transaction price was determined and allocated as follows (in thousands):

<b>Transaction Price</b>	
Fair value of equity instruments issued	\$38,762
Transaction costs incurred	284
Total transaction price	<u>\$39,046</u>
<b>Transaction Price Allocation</b>	
In-process research and development	\$28,463
Cash acquired	11,274
Prepaid expenses and other assets	219
Liabilities assumed	(910)
Total transaction price	<u>\$39,046</u>

The fair value of the consideration issued and the fair value of the assets acquired and liabilities assumed was based on a probability weighted model that utilized three different scenarios that considered both a scenario that utilized an asset approach and two scenarios that utilized a market approach.

The acquired in-process research and development of \$28,463 thousand did not have an alternative future use and was charged to research and development expense at the acquisition date.

### **Note 4. Fair Value Measurements**

The following table presents information about the Company's financial assets measured at fair value on a recurring basis and indicate the level of the fair value hierarchy utilized to determine such fair values (in thousands):

	Fair Value Measurements as of December 31, 2018 using:			
	Level 1	Level 2	Level 3	Total
<b>Cash equivalents:</b>				
Money market funds	\$6,689	\$ —	\$ —	\$6,689
Total cash equivalents	<u>\$6,689</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$6,689</u>

	Fair Value Measurements as of December 31, 2019 using:			
	Level 1	Level 2	Level 3	Total
<b>Cash equivalents:</b>				
Money market funds	\$81,832	\$ —	\$ —	\$81,832
Total cash equivalents	<u>\$81,832</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$81,832</u>

The acquisition of Arrys required the determination of fair value on a non-recurring basis. The fair value of the equity consideration issued is considered to be a level three estimate in the fair value hierarchy. In addition, the consideration was allocated to the assets acquired and liabilities assumed on a relative fair value basis. The determination of the fair value of the assets acquired and liabilities assumed is also considered to be a level three estimate in the fair value hierarchy. Reasonable changes in the assumptions used in the valuation models, including the weighting between the three scenarios utilized to value the equity instruments, could result in materially different values.

**Note 5. Prepaid Expenses and Other Current Assets**

Prepaid expenses and other current assets consisted of the following at December 31, 2018 and 2019 (in thousands):

	December 31,	
	2018	2019
Clinical, manufacturing and scientific development	\$1,242	\$1,856
Other	582	1,266
	<u>\$1,824</u>	<u>\$3,122</u>

**Note 6. Property and Equipment, net**

Property and equipment consisted of the following at December 31, 2018 and 2019 (in thousands):

	December 31,	
	2018	2019
Property and equipment:		
Lab equipment	\$ 657	\$ 951
Leasehold improvements	160	160
Electronic equipment and software	24	46
Total property and equipment	841	1,157
Less: accumulated depreciation	(145)	(388)
Property and equipment, net	<u>\$ 696</u>	<u>\$ 769</u>

Depreciation expense for the years ended December 31, 2018 and December 31, 2019 was \$179 thousand and \$243 thousand, respectively. There were no impairments for the years ended December 31, 2018 and 2019.

**Note 7. Accrued Expenses and Other Current Liabilities**

Accrued expenses and other current liabilities consist of the following at December 31, 2018 and 2019 (in thousands):

	December 31,	
	2018	2019
Employee compensation	\$ 750	\$1,040
Research and development expenses	356	1,174
Professional fees	325	344
Current portion of deferred rent	126	121
	<u>\$1,557</u>	<u>\$2,679</u>

**Note 8. Collaboration Agreement and Stock Purchase Agreement with BMS**

In January 2019, the Company entered into the BMS Collaboration Agreement with Celgene Corporation, which was acquired by BMS in November 2019, whereby the Company will carry out initial research and development activities with the goal of identifying and developing drug candidates for certain cancer types. Concurrent with execution of the BMS Collaboration Agreement, the Company entered into a stock purchase agreement with BMS, which resulted in the issuance of 14,545,450 shares of Series A-1 Preferred Stock (the "Stock Purchase Agreement").

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### *Agreement Structure*

Under the BMS Collaboration Agreement, the Company will conduct exploratory and discovery activities, with the goal of identifying product candidates for certain targets, which are the kynurenine, which the Company is developing as IK-412, and the aryl hydrocarbon receptor (“AHR”), which the Company is developing as IK-175. The Company is obligated to complete research and development activities through completion of a Phase 1b clinical trial for each program. BMS has the option to receive a global-development, manufacture and commercialization license for the product candidate. Subsequent to the delivery of a license, BMS is responsible for the worldwide development, manufacturing and commercialization of these product candidates.

BMS paid the Company a total of \$95.0 million in aggregate upfront consideration related to the BMS Collaboration Agreement and Stock Purchase Agreement. The Company is eligible to receive \$50.0 million, in case of an exercise of its option with respect to IK-175, and \$40.0 million, in case of an exercise of its option with respect to IK-412. If the Company does not complete a Phase 1b clinical trial by the end of the research term, the Company may provide a data package to BMS to support the decision to exercise the option for an additional \$0.25 million. Upon the exercise of the delivery of each license, the Company becomes eligible to receive up to \$450 million in milestone payments as well as a tiered royalty on worldwide sales from the high single to low double digits.

### *Accounting Considerations of the Agreement*

The BMS Collaboration Agreement and the Stock Purchase Agreement were executed concurrently and in contemplation of each other. The issuance of Series A-1 Preferred Stock was initially accounted for at fair value. The purchase price for the Series A-1 Preferred Stock was considered to be at a discount from fair value, and therefore \$1.8 million of the upfront from the BMS Collaboration Agreement was allocated to the equity arrangement.

The Company determined that the BMS Collaboration Agreement represented a contract with a customer and should be accounted for in accordance with ASC 606. The Company identified the two performance obligations, which are research and development services for IK-175 and IK-412. The options to receive worldwide development and commercialization licenses for the two targets and the option to receive manufacturing services in the future were determined to not provide any material rights to the customer and are therefore not considered to be performance obligations. The arrangement also contains certain de minimis items, including participation on joint oversight committees.

The Company identified \$78.7 million of total transaction price which represents the upfront consideration allocated to the revenue arrangement. Additional consideration to be paid to the Company upon exercise of a right to receive a license or potential milestone and royalty payments are excluded from the transaction price as they relate to amounts that can only be achieved subsequent to the exercise of an options and are outside of the initial contract term.

Based on the distinct performance obligations identified above, the Company allocated the \$78.7 million transaction price based on relative estimated standalone selling prices of each of its performance obligations as follows:

- \$41.2 million for research and development services for IK-175; and
- \$37.5 million for research and development services for IK-412.

The Company determined the estimated standalone selling price for the research and development services based on internal estimates of the costs to perform the services, including expected internal expenses and expenses with third parties, marked up to include a reasonable profit margin. Significant inputs used to determine the total expense of the research and development activities include the length of time required and the number and cost of various studies that will be performed to complete the applicable development plan.



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The Company is recognizing revenue related to each of its performance obligations as the research and development services are performed. The Company recognizes revenue related to research and development services performed using an input method by calculating costs incurred at each period end relative to total costs expected to be incurred.

During the year ended December 31, 2019, the Company recognized revenue of \$13.8 million from the BMS Collaboration Agreement. During the year ended December 31, 2018, the Company did not recognize any research and development revenue under the BMS Collaboration Agreement. The consolidated balance sheet at December 31, 2019 included deferred revenue of \$65.0 million related this agreement, of which \$20.7 million and \$44.3 million were classified as current and non-current, respectively. This amount is expected to be recognized as performance obligations are satisfied through the completion of the research and development services for IK-175 and IK-412.

### **Note 9. Redeemable Convertible Preferred Stock**

As of December 31, 2019, the authorized capital stock of the Company includes 75,727,268 shares of redeemable convertible preferred stock, consisting of 28,000,000 shares of Series A Redeemable Convertible Preferred Stock ("Series A Preferred Stock") and 47,727,268 shares of Series A-1 Redeemable Convertible Preferred Stock ("Series A-1 Preferred Stock"), collectively known as Redeemable Convertible Preferred Stock.

Redeemable convertible preferred stock consists of the following:

	As of December 31, 2018			Aggregate Liquidation Preference
	Shares Authorized	Shares Issued and Outstanding	Carrying Value	
	(in thousands, except share data)			
Series A	28,000,000	28,000,000	\$27,832	\$ 28,000
Series A-1	33,181,818	33,181,818	34,744	33,182
	<u>61,181,818</u>	<u>61,181,818</u>	<u>\$62,576</u>	<u>\$ 61,182</u>
	As of December 31, 2019			
	Shares Authorized	Shares Issued and Outstanding	Carrying Value	Aggregate Liquidation Preference
	(in thousands, except share data)			
Series A	28,000,000	28,000,000	\$27,832	\$ 28,000
Series A-1	47,727,268	47,727,268	51,035	47,727
	<u>75,727,268</u>	<u>75,727,268</u>	<u>\$78,867</u>	<u>\$ 75,727</u>

In March 2016, the Company entered into a Series A Preferred Stock Purchase Agreement. Upon execution of the agreement, the Company issued 6,000,000 shares of Series A Preferred Stock for a purchase price of \$1.00 per share. The agreement also provided for the issuance of additional shares of Series A Preferred Stock upon the occurrence of certain contingent events.

In April 2017, the Company modified the terms of the agreement and issued 2,400,000 shares of Series A Preferred Stock for a purchase price of \$1.00 per share. The amendment decreased the number of shares that would be issued upon the occurrence of the contingent events by the same number of shares.

In November 2017, the contingent events were achieved, and the Company issued the remaining 19,600,000 shares of Series A Preferred Stock for a purchase price of \$1.00 per share.

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In December 2018, the Company issued 33,181,818 Series A-1 Preferred Shares pursuant to the acquisition of Arrys. The shares were recorded at fair value of \$34.7 million (Note 3).

In January 2019, the Company issued 14,545,450 Series A-1 Preferred shares to BMS as part of a stock purchase agreement.

The obligation to issue the additional shares of Series A Preferred Stock was assessed and not considered to be a freestanding instrument. As a result, the feature was embedded within the shares, however, did not meet the characteristics to be bifurcated and accounted for separately apart from the underlying shares of Series A Preferred Stock. The Preferred Stock is eligible to be redeemed upon certain deemed-liquidation events which are outside of the Company's control. As a result, the shares are presented outside of stockholders' deficit. The shares will be accreted to redemption value if the events that would result in a deemed-liquidation event are considered probable. As of December 31, 2019, these events are not considered probable of occurring.

The Preferred Stock has the following characteristics as of December 31, 2019:

### (a) Voting

On any matter presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the Company's Amended and Restated Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class and have other special voting rights.

The holders of outstanding shares of Preferred Stock shall be entitled to elect three directors of the Company. The investors have agreed that two of the directors are to be named by one investor and the other director is to be named by a separate investor.

### (b) Dividends

The holders of Preferred Stock are entitled to an 8% non-cumulative dividend. Dividends are payable only when, as and if declared by the Board. No dividends are payable to the common stockholders unless a dividend is also paid to Preferred Stockholders equal to at least the amount that would be received if the shares of Preferred Stock were converted into common stock.

Through December 31, 2019, no dividends have been declared or paid by the Company.

### (c) Liquidation Preference

In the event of any voluntary or involuntary liquidation, dissolution, or winding up of the Company, or upon the event of certain other deemed liquidation events, holders of shares of Preferred Stock then outstanding shall be entitled to receive the greater of (i) an amount per share equal to the Preferred Stock original issue price, plus any dividends declared but unpaid thereon or (ii) the amount that would be received if the Preferred Stock was converted into common stock just prior to the liquidation event.

### (d) Conversion

Each share of Preferred Stock shall be convertible into shares of common stock at the option of the stockholder, at any time, at a rate of one for one and are automatically converted upon a qualified initial public offering or upon written consent of at least 75% of the holders of the outstanding shares of Preferred Stock. The conversion ratio is initially set at one for one, but may be adjusted for certain issuances of additional shares of Common Stock, stock splits, stock combinations, certain dividends and distributions, and mergers and reorganizations.

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### **Note 10. Common Stock**

At December 31, 2018 and 2019, the Company had 90,909,088 and 113,372,392, shares of common stock authorized, respectively, of which 18,818,179 and 18,967,681 were issued and outstanding as of December 31, 2018 and 2019, respectively.

**Voting:** The holders of shares of common stock are entitled to one vote for each share of common stock held at all meetings of stockholders and written action in lieu of meetings; there is no cumulative voting. The holders of outstanding shares of common stock shall be entitled to elect two directors of the Company.

**Liquidation:** After payment to the holders of shares of Preferred Stock of their liquidation preferences, the remaining assets of the Company are distributed to the holders of common stock.

**Restricted stock:** A total of 6,000,000 shares of the Company's common stock were issued in 2016 and were subject to repurchase agreements upon issuance. The repurchase right lapsed ratably over a period of 24 months.

The changes in the unvested restricted stock during the year ended December 31, 2018 was:

Unvested restricted stock at December 31, 2017	750,000
Vesting of restricted stock	(750,000)
Unvested restricted stock at December 31, 2018	—

There was no unvested restricted stock outstanding during the year ended December 31, 2019.

### **Note 11. Stock-Based Compensation**

In December 2018, in conjunction with the acquisition of Arrys, the Company increased the number of shares available for issuance under the Company's 2016 Stock Incentive Plan (the "Plan") to up to 10,909,091, as approved by the Board of Directors. On March 30, 2019, the number of shares reserved under the Plan was increased by 7,372,392 shares to 18,281,483, as approved by the Board of Directors.

As of December 31, 2019, 616,065 shares were available for grant under the Plan. The Plan provides that equity awards may be granted to employees and nonemployees. The vesting periods for equity awards, which generally is four years, are determined by the Board of Directors. The contractual term for stock option awards is ten years.

Total stock-based compensation expense recorded during the years ended December 31, 2018 and 2019 was as follows (in thousands):

	December 31,	
	2018	2019
Research and development	\$137	\$ 469
General and administrative	176	700
Total share-based compensation expense	<u>\$313</u>	<u>\$1,169</u>

The weighted-average fair value of the stock options granted during the year ended December 31, 2018 and 2019 was \$0.42 and \$0.36 per share, respectively. As of December 31, 2019, the total unrecognized stock-based compensation balance for unvested options was \$4.4 million which is expected to be recognized over 2.5 years. The Company recognized \$0.7 thousand of stock-based compensation expense for the year ended December 31, 2018 related to the vesting of restricted common stock. There was no stock-based compensation expense related to the vesting of restricted common stock for the year ended December 31, 2019.

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The following table summarizes stock option activity under the Plan for the year ended December 31, 2019:

	Number of Options	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding as of December 31, 2018	8,038,846	\$ 0.31	9.15	\$ 2,142
Granted	11,400,796	0.58		—
Exercised	(149,502)	0.17		—
Cancelled or forfeited	(1,773,753)	0.55		—
Outstanding as of December 31, 2019	17,516,387	\$ 0.47	8.86	\$ 2,842
Options exercisable as of December 31, 2019	4,215,362	\$ 0.30	7.98	\$ 1,390
Options unvested as of December 31, 2019	13,301,025	\$ 0.52	9.15	\$ 1,452

The intrinsic value of options exercised for the years ended December 31, 2018 and 2019 was zero and \$70 thousand, respectively.

The fair value of each option award granted during the years ended December 31, 2018 and 2019 is estimated on the date of grant using the Black-Scholes option pricing model and the weighted average assumptions noted in the following table:

	Year Ended December 31,	
	2018	2019
Weighted average risk-free interest rate	2.7%	2.2%
Expected dividend yield	— %	— %
Expected option term (in years)	6.2	6.1
Expected stock price volatility	81.0%	67.4%

### Note 12. Income Taxes

The effective income tax rate differed from the amount computed by applying the federal statutory rate to the Company's loss before income taxes as follows:

	Year Ended December 31,	
	2018	2019
Tax effected at statutory rate	21.0%	21.0%
State taxes	2.0%	7.7%
Stock compensation	(0.1%)	(1.3%)
Non-taxable incentives	0.1%	0.1%
Acquired in-process R&D	(14.6%)	— %
Federal research and development credits	0.4%	8.6%
Change in valuation allowance	(8.8%)	(36.1%)
Total	— %	— %

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The Company's total deferred tax assets at December 31, 2018 and 2019 are as follows (in thousands):

	December 31,	
	2018	2019
<b>Deferred tax assets:</b>		
Federal net operating loss carryforward	\$ 6,469	\$ 9,916
State net operating loss carryforward	1,915	2,966
R&D credit carryforwards	694	2,330
Capitalized start-up costs	312	287
Accruals and reserves	72	47
Stock options	24	53
Total deferred tax assets	9,486	15,599
<b>Deferred tax liability:</b>		
Fixed assets	(158)	(190)
Total deferred tax liability	(158)	(190)
Valuation Allowance	(9,328)	(15,409)
Net deferred tax assets and liability	\$ —	\$ —

The Company has had no income tax expense due to operating losses incurred since inception. ASC 740 requires a valuation allowance to reduce the deferred tax assets reported if, based on the weight of the evidence, it is more-likely-than-not that some portion or all of the deferred tax assets will not be realized. The Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets. Based on this, the Company has provided a valuation allowance for the full amount of the net deferred tax assets as the realization of the deferred tax assets is not determined to be more likely than not. During 2019, the valuation allowance increased by \$5.7 million primarily due to the increase in the Company's net operating loss during the period.

As of December 31, 2019, the Company had approximately \$47.2 million of Federal operating loss carryforwards, of which \$8.9 million begin to expire in 2036 and \$38.3 million are not subject to expiration. These loss carryforwards are available to reduce future federal taxable income, if any. As of December 31, 2019, the Company had approximately \$46.9 million of state operating loss carryforward, of which \$46.9 million will begin to expire in 2036. As of December 31, 2019, the Company also has federal and state research and development tax credit carryforwards of approximately \$1.9 million and \$538 thousand respectively, to offset future income taxes, which will begin to expire in December 2031. These loss carryforwards are subject to review and possible adjustment by the appropriate taxing authorities. The amount of loss carryforwards that may be utilized in any future period may be limited based upon changes in the ownership of the company's ultimate parent.

The Company follows the provisions of ASC 740-10, *Accounting for Uncertainty in Income Taxes*, which specifies how tax benefits for uncertain tax positions are to be recognized, measured, and recorded in financial statements; requires certain disclosures of uncertain tax matters; specifies how reserves for uncertain tax positions should be classified on the balance sheet; and provides transition and interim period guidance, among other provisions. The Company's policy is to recognize interest and penalties accrued on any uncertain tax positions as a component of income tax expense, if any, in its statements of income. As of December 31, 2019, and 2018, the Company had no reserves for uncertain tax positions. For the years ended December 31, 2019 and 2018, no estimated interest or penalties were recognized on uncertain tax positions.

The Company has not conducted a study of its research and development credit carryforwards. This study may result in an adjustment to research and development credit carryforwards; however, until a study is completed and any adjustment is known, no amounts are being presented as an uncertain tax position. A full valuation

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allowance has been provided against the Company's research and development credits and, if an adjustment is required, this adjustment would be offset by an adjustment to the valuation allowance. Thus, there would be no impact to the balance sheets or statements of operations if an adjustment were required.

The Company's federal and Massachusetts income tax returns for the years ended December 31, 2017 to December 31, 2019 remain open and are subject to examination by the Internal Revenue Service and state taxing authorities.

### **Note 13. Research License Agreements**

During 2015, the Company entered into an exclusive patent license agreement (the "UT Austin License") to license certain technologies and intellectual property rights from the University of Texas at Austin (the "University"), an entity affiliated with a director of the Company at the time of the agreement. The UT Austin License shall remain in effect until the expiration or abandonment of the last to expire technologies and intellectual property rights. The Company shall pay License Maintenance fees annually of \$40 thousand. Additionally, the Company shall make additional milestone payments to the University upon meeting certain development milestones in the aggregate of \$4.7 million upon meeting certain development milestones during the term of the UT Austin License. The Company will pay the University royalties as defined in the UT Austin License on any commercialized product sales related to the licensed technology in a percentage in the low single digits. The Company will also be responsible for reimbursing the University for certain patent-related costs incurred on its behalf.

For the years ended December 31, 2018 and 2019, the Company incurred expenses totaling \$20 thousand and \$100 thousand, respectively, related to license maintenance fees and \$80 thousand and \$126 thousand related to patent reimbursement costs, respectively, related to the UT Austin License, which are included in research and development expense.

In 2018, the Company acquired IPR&D on an Arrys' immune-oncology candidate based on the intellectual property associated with Arrys' AskAt License as part of the acquisition of Arrys. Total consideration allocated to the technology was \$28.5 million and was recognized as research and development expense upon the acquisition. The AskAt License is intended to be used by the Company in its future development of therapeutic drug candidates for eventual clinical development and commercialization. The Company shall make additional milestone payments to AskAt upon meeting certain development milestones totaling \$4 million, as well as certain sales event milestones ranging from \$50 million to \$250 million contingent on sales in a calendar year, during the term of the AskAt License. The Company will pay the AskAt royalties a percentage in the low single digits as defined in the AskAt License on any commercialized product sales related to the licensed technology.

### **Note 14. Commitments and Contingencies**

In August 2017, the Company entered into an operating lease agreement with Obsidian Therapeutics, Inc. to sublease approximately 4,156 square feet of office space located at 1030 Massachusetts Avenue, Cambridge, Massachusetts, as amended, which expired in November 2018. The monthly rent per the lease, exclusive of operating expenses, real estate taxes and parking, was \$24 thousand.

In December 2018, the Company entered into an operating lease with Vertex Pharmaceuticals Inc. ("Vertex") to lease approximately 13,170 square feet of office, laboratory and vivarium space at 50 Northern Ave, Boston, Massachusetts, expiring in December 2020. In July 2020, the Company extended the term of the lease through February 2021. The monthly rent per the lease, exclusive of operating expenses and real estate taxes, is \$93 thousand, with the first payment of rent paid in January 2019. Under the terms of the lease, Vertex contributed \$160 thousand towards a tenant improvement allowance.

The Company recorded rent expense of \$535 thousand and \$996 thousand for the years ended December 31, 2018 and 2019, respectively. The Company recognizes rent expense on a straight-line basis over the lease period

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and has recorded deferred rent for rent expense incurred but not yet paid and for tenant improvement allowance paid by the lessor, which resulted in a deferred balance of \$243 thousand and \$121 thousand at December 31, 2018 and 2019, respectively.

The following table summarizes the future minimum lease payments under the Company's operating leases as of December 31, 2019 (in thousands):

<b>Year Ending December 31,</b>	
2020	1,118
<b>Total</b>	<b><u>\$1,118</u></b>

The Company is also party to various agreements, principally relating to licensed technology, that require future payments relating to milestones not met at December 31, 2019 or royalties on future sales of specified products that have not yet occurred as of December 31, 2019.

### **Note 15. Related Party Transactions**

The Company entered into several agreements with investors and entities affiliated with an investor:

- 1) The Company has entered into a lease agreement with an investor and a separate lease agreement with an affiliate of the investor for office and laboratory space located in Massachusetts. The Company paid the related parties approximately \$319 thousand in total rent during the year ended December 31, 2018. The Company had no rent payments to related parties in the year ended December 31, 2019.
- 2) The Company performs services on behalf of entities affiliated with the investor. The Company recognized \$990 thousand during the year ended December 31, 2018. As of December 31, 2018, the Company was owed \$6 thousand related to these activities. The Company did not perform services on behalf of entities affiliated with the investor in 2019.
- 3) The Company received consulting services from an investor for \$100 thousand and \$161 thousand during the years ended December 31, 2018 and 2019, respectively. The Company has accrued for \$75 thousand of service costs as of December 31, 2018. There was no accrual for the year ended December 31, 2019.
- 4) As discussed in Note 13 above, the Company recognized \$28.5 million as expense upon the acquisition of IPR&D associated with the Arrys' AskAt License. The Company also incurred expenses of \$17 thousand during the year ended December 31, 2018 related to the AskAt consulting services agreement.

The Company entered into several agreements with a director and an entity affiliated with a director:

- 1) As discussed in Note 13 above, the Company has entered into a license agreement with the University, which was affiliated with a director of the Company at the time of the agreement.
- 2) The Company has engaged the University to perform certain research services. The Company incurred expenses totaling \$100 thousand and \$20 thousand, respectively, related to license maintenance fees and \$126 thousand and \$80 thousand, respectively, related to patent reimbursement costs in the years ended December 31, 2019 and 2018, respectively.
- 3) The Company received consulting services from a director for \$101 thousand during the year ended December 31, 2019. The Company did not receive consulting services from a director during the year ended December 31, 2018.

### **Note 16. Net Loss per Share Attributable to Common Stockholders**

Basic and diluted loss per share attributable to common stockholders is computed by dividing net loss attributable to common stockholders by the weighted-average common shares outstanding.

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The Company's potentially dilutive securities, which include convertible preferred stock, restricted stock, and stock options, have been excluded from the computation of diluted net loss per share as the effect would be to reduce the net loss per share. Therefore, the weighted-average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The Company excluded the following from the computation of diluted net loss per share attributable to common stockholders because including them would have had an anti-dilutive effect:

	Year ended December 31,	
	2018	2019
Convertible Preferred Stock	61,181,818	75,727,268
Options to purchase Common Stock	8,038,846	17,516,387
Total	69,220,664	93,243,655

### Note 17. Subsequent Events

The Company evaluated all events or transactions that occurred from December 31, 2019 through January 8, 2021, the date the consolidated financial statements were issued. The Company has concluded that no events or transactions have occurred that require disclosure in the accompanying consolidated financial statements, other than the following:

(a) *Lease*

On July 21, 2020, the Company entered into an operating lease agreement for 20,752 square feet of office, lab and animal care facility space located in Boston, Massachusetts for the Company's new corporate headquarters. The commencement date of the lease is estimated to be February 1, 2021 and the lease term is 63 months. The lease provides a three-month free rent period, which will commence on the lease commencement date. The base rent at commencement is \$145 thousand a month and escalates by 3% annually. The Company provided a letter of credit to secure their obligations under the lease in the initial amount of \$0.9 million.

(b) *Common Stock and Preferred Stock Authorized for Issuance*

On October 1, 2020, the Board Amended the Company's Amended and Restated Certificate of Incorporation to increase the number of shares of Common Stock authorized for issuance to 200,000,000 shares. In addition, the Board amended the Company's Amended and Restated Certificate of Incorporation to increase the number of shares of Preferred Stock authorized for issuance to 83,590,362 shares, of which 28,000,000 are designated Series A Preferred Stock, 47,727,268 are designated Series A-1 Preferred Stock and 7,863,094 are designated Series A-2 Preferred Stock.

(c) *Amplify Medicines, Inc. Acquisition*

On October 1, 2020 (the "Acquisition Date"), the Company acquired Amplify, a related party. Pursuant to the terms and conditions of the Agreement and Plan of Merger ("the Merger Agreement"), the Company issued a total of 7,863,094 shares of Series A-2 Redeemable Convertible Preferred Stock at a fair value of \$1.31 for aggregate fair value of approximately \$10.3 million, net of issuance costs and 3,048,764 shares of Common Stock with a fair value of \$1.03 for a total fair value of \$3.1 million related to the Common Stock issued to the shareholders of Amplify as part of the Merger Agreement.

#### Voting Rights

Each holder of outstanding shares of Series A-2 Redeemable Convertible Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the Company's Amended and Restated Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class.



### Dividends

The holders of Series A-2 Redeemable Convertible Preferred Stock are entitled to an 8% non-cumulative dividend. Dividends are payable only when, as and if declared by the Board. No dividends are payable to the common stockholders unless a dividend is also paid to Preferred Stockholders equal to at least the amount that would be received if the shares of Preferred Stock were converted into common stock.

### Liquidation Preference

In the event of any voluntary or involuntary liquidation, dissolution, or winding up of the Company, or upon the event of certain other deemed liquidation events, holders of Series A-2 Redeemable Convertible Preferred Stock then outstanding shall be entitled to receive the greater of (i) an amount per share equal to \$0.8266466, plus any dividends declared but unpaid thereon or (ii) the amount that would be received if the Preferred Stock was converted into common stock just prior to the liquidation event.

### Conversion

Each share of Preferred Stock shall be convertible into shares of common stock at the option of the stockholder, at any time, at a rate of one for one and are automatically converted upon a qualified initial public offering or upon written consent of at least 75% of the holders of the outstanding shares of Preferred Stock. The conversion ratio is initially set at one for one, but may be adjusted for certain issuances of additional shares of Common Stock, stock splits, stock combinations, certain dividends and distributions, and mergers and reorganizations.

The Preferred Stock is eligible to be redeemed upon certain deemed-liquidation events which are outside of the Company's control. As a result, the shares will be presented outside of stockholders' deficit. The shares will be accreted to redemption value if the events that would result in a deemed-liquidation event are considered probable.

The Company first assessed if the acquisition represented a transaction which was under common control or common ownership under both the variable interest entity guidance and the voting interest entity guidance. While Amplify is a related party to the Company, it is not under common control or common ownership with the Company. The Company next assessed if Amplify, represented an asset or a business under FASB ASC Topic 805, *Business Combinations ASC 805*, as amended by ASU 2017-01. Under ASC 805, the Company determined that Amplify did not constitute a business since substantially all of the fair value of the gross assets acquired is concentrated in a single asset, which is the intellectual property for the lead product candidate in development by Amplify. The intellectual property acquired from Amplify is at an early stage of development and will require a significant investment of time and capital for development. There is no assurance that the Company will be successful in completing the additional research and development activities. The intellectual property acquired is considered to have no alternative future use, and therefore the cost of the acquisition allocated to it will be expensed as incurred.

The transaction price was determined and allocated as follows (in thousands):

<b>Transaction Price</b>	
Fair value of equity instruments issued	<u>\$13,441</u>
<b>Transaction Price Allocation</b>	
In-process research and development	\$10,689
Cash acquired	3,688
Prepaid expenses and other assets	34
Liabilities assumed	<u>(970)</u>
Total transaction price	<u>\$13,441</u>

The fair value of the consideration issued was based on a probability weighted model that utilized two different scenarios that utilized a market approach.

The Company will recognize the write-off of the acquired in-process research and development intellectual property of \$10.7 million within Research and development expense upon the closing of the transaction.

(d) *Common Stock and Preferred Stock Authorized for Issuance*

On December 18, 2020, the Company amended the Company's Amended and Restated Certificate of Incorporation to increase the number of shares of Common Stock authorized for issuance to 230,000,000 shares. In addition, the Board amended the Company's Amended and Restated Certificate of Incorporation to increase the number of shares of Preferred Stock authorized for issuance to 169,396,576 shares, of which 28,000,000 are designated Series A Preferred Stock, 47,727,268 are designated Series A-1 Preferred Stock, 7,863,094 are designated Series A-2 Preferred Stock and 85,806,214 are designated Series B Preferred Stock.

(e) *Series B Redeemable Convertible Preferred Stock Issuance*

On December 21, 2020, the Company issued a total of 85,806,214 shares of Series B Redeemable Convertible Preferred Stock at a purchase price of \$1.3985 per share for aggregate proceeds of approximately \$116.4 million, net of issuance costs.

*Voting Rights*

Each holder of outstanding shares of Series B Redeemable Convertible Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Series B Redeemable Convertible Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the Company's Amended and Restated Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class.

*Dividends*

The holders of Series B Redeemable Convertible Preferred Stock are entitled to an 8% non-cumulative dividend in seniority to the Series A, A-1 and A-2 Redeemable Convertible Preferred Stock. Dividends are payable only when, as and if declared by the Board. No dividends are payable to the common stockholders unless a dividend is also paid to Preferred Stockholders equal to at least the amount that would be received if the shares of Preferred Stock were converted into common stock.

*Liquidation Preference*

In the event of any voluntary or involuntary liquidation, dissolution, or winding up of the Company, or upon the event of certain other deemed liquidation events, holders of shares of Series B Redeemable Convertible Preferred Stock then outstanding shall be entitled to receive the greater of (i) an amount per share equal to \$1.3985, plus any dividends declared but unpaid thereon or (ii) the amount that would be received if the Preferred Stock was converted into common stock just prior to the liquidation event.

*Conversion*

Each share of Preferred Stock shall be convertible into shares of common stock at the option of the stockholder, at any time, at a rate of one for one and are automatically converted upon a qualified initial public offering or upon written consent of at least 75% of the holders of the outstanding shares of Preferred Stock. The conversion ratio is initially set at one for one, but may be adjusted for certain issuances of additional shares of Common Stock, stock splits, stock combinations, certain dividends and distributions, and mergers and reorganizations.

The Preferred Stock is eligible to be redeemed upon certain deemed-liquidation events which are outside of the Company's control. As a result, the shares will be presented outside of stockholders'

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deficit. The shares will be accreted to redemption value if the events that would result in a deemed-liquidation event are considered probable.

(f) *Option Plan Increase*

On December 18, 2020, the number of shares reserved under the Plan was increased by 18,014,373 shares to 37,264,008, as approved by the Board of Directors.

## IKENA ONCOLOGY, INC.

Condensed Consolidated Balance Sheets  
(in thousands, except share and per share amounts)  
(Unaudited)

	December 31, 2019	September 30, 2020
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 82,083	\$ 55,860
Prepaid expenses and other current assets	3,122	2,822
Total current assets	85,205	58,682
Property and equipment, net	769	788
Right-of-use asset	—	422
Other assets	—	872
Total assets	<u>\$ 85,974</u>	<u>\$ 60,764</u>
<b>Liabilities, Redeemable Convertible Preferred Stock and Stockholders' Deficit</b>		
Current liabilities:		
Accounts payable	\$ 935	\$ 1,051
Accrued expenses and other current liabilities	2,679	3,059
Operating lease liability	—	460
Deferred revenue	20,683	23,107
Total current liabilities	24,297	27,677
Deferred revenue, net of current portion	44,273	32,720
Total liabilities	<u>\$ 68,570</u>	<u>\$ 60,397</u>
Commitments and contingencies (Note 14)		
Redeemable convertible preferred stock (Series A and A-1), \$0.001 par value, 75,727,268 shares authorized, issued and outstanding as of December 31, 2019 and September 30, 2020 (liquidation preference of \$75,727,268 as of December 31, 2019 and September 30, 2020);	\$ 78,867	\$ 78,867
Stockholders' deficit:		
Common stock, \$0.001 par value, 113,372,392 shares authorized, 18,967,681 issued and outstanding as of December 31, 2019; 113,795,082 shares authorized, 19,021,056 issued and outstanding as of September 30, 2020;	19	19
Additional paid-in capital	5,601	6,769
Accumulated deficit	(67,083)	(85,288)
Total stockholders' deficit	<u>(61,463)</u>	<u>(78,500)</u>
Total liabilities, redeemable convertible preferred stock and stockholders' deficit	<u>\$ 85,974</u>	<u>\$ 60,764</u>

The accompanying notes are an integral part of these condensed consolidated financial statements.

**IKENA ONCOLOGY, INC.****Condensed Consolidated Statements of Operations and Comprehensive Loss**  
**(in thousands, except share and per share amounts)**  
**(Unaudited)**

	<b>Nine Months Ended September 30,</b>	
	<b>2019</b>	<b>2020</b>
Research and development revenue under collaboration agreement	\$ 10,949	\$ 9,129
Operating expenses:		
Research and development	18,974	21,445
General and administrative	5,024	6,150
Total operating expenses	23,998	27,595
Loss from operations	(13,049)	(18,466)
Other income	1,340	261
Net loss and comprehensive loss	\$ (11,709)	\$ (18,205)
Net loss per share attributable to common stockholders basic and diluted	\$ (0.62)	\$ (0.96)
Weighted-average common stocks outstanding, basic and diluted	18,938,256	19,013,848

The accompanying notes are an integral part of these condensed consolidated financial statements.

**IKENA ONCOLOGY, INC.**
**Condensed Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' Deficit**  
**(in thousands, except share amounts)**  
**(Unaudited)**

	Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount			
<b>Balance at December 31, 2018</b>	61,181,818	\$62,576	18,818,179	\$ 19	4,407	\$ (50,266)	\$ (45,840)
Issuance of preferred stock in connection with private placement	14,545,450	16,291	—	—	—	—	—
Exercise of stock options	—	—	149,502	—	25	—	25
Stock-based compensation	—	—	—	—	809	—	809
Net loss and comprehensive loss	—	—	—	—	—	(11,709)	(11,709)
<b>Balance at September 30, 2019</b>	<u>75,727,268</u>	<u>\$78,867</u>	<u>18,967,681</u>	<u>\$ 19</u>	<u>\$ 5,241</u>	<u>\$ (61,975)</u>	<u>\$ (56,715)</u>
	Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount			
<b>Balance at December 31, 2019</b>	75,727,268	\$78,867	18,967,681	\$ 19	5,601	\$ (67,083)	\$ (61,463)
Exercise of stock options	—	—	53,375	—	21	—	21
Stock-based compensation	—	—	—	—	1,147	—	1,147
Net loss and comprehensive loss	—	—	—	—	—	(18,205)	(18,205)
<b>Balance at September 30, 2020</b>	<u>75,727,268</u>	<u>\$78,867</u>	<u>19,021,056</u>	<u>\$ 19</u>	<u>\$ 6,769</u>	<u>\$ (85,288)</u>	<u>\$ (78,500)</u>

The accompanying notes are an integral part of these condensed consolidated financial statements.

**IKENA ONCOLOGY, INC.**
**Condensed Consolidated Statements of Cash Flows**  
**(in thousands)**  
**(Unaudited)**

	Nine Months Ended September 30,	
	2019	2020
<b>Cash flows from operating activities</b>		
Net loss	\$(11,709)	\$(18,205)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities		
Depreciation	178	225
Stock-based compensation	809	1,147
Non-cash lease expense	(86)	713
Changes in operating assets and liabilities		
Prepaid expenses and other current assets	(950)	341
Accounts payable	(422)	89
Accrued expenses and other current liabilities	388	266
Lease liability	—	(703)
Deferred revenue	67,760	(9,129)
Net cash flows provided by (used in) operating activities	<u>55,968</u>	<u>(25,256)</u>
<b>Cash flows from investing activities</b>		
Purchases of property and equipment	(179)	(116)
Net cash flows used in investing activities	<u>(179)</u>	<u>(116)</u>
<b>Cash flows from financing activities</b>		
Proceeds from issuance of preferred stock in connection with private placement	16,291	—
Proceeds from exercise of stock options	25	21
Net cash flows provided by financing activities	<u>16,316</u>	<u>21</u>
Net increase (decrease) in cash and cash equivalents and restricted cash	72,105	(25,351)
Cash, cash equivalents and restricted cash, beginning of period	18,156	82,083
Cash, cash equivalents and restricted cash, end of period	<u>\$ 90,261</u>	<u>\$ 56,732</u>
Cash and cash equivalents	<u>\$ 90,261</u>	<u>\$ 55,860</u>
Restricted cash included in other assets	<u>—</u>	<u>872</u>
Cash, cash equivalents and restricted cash, end of period	<u>\$ 90,261</u>	<u>\$ 56,732</u>
<b>Supplemental disclosure of non-cash activities</b>		
Purchases of property and equipment in accrued expense	<u>\$ —</u>	<u>\$ 128</u>
Right-of-use assets recognized upon adoption of ASC 842	<u>\$ —</u>	<u>\$ 956</u>
Right-of-use asset obtained in exchange for operating lease liability	<u>\$ —</u>	<u>\$ 178</u>
Deferred transaction costs in accounts payable and accrued expenses	<u>\$ —</u>	<u>\$ 133</u>

The accompanying notes are an integral part of these condensed consolidated financial statements.

**IKENA ONCOLOGY, INC.**

**Notes to Condensed Consolidated Financial Statements  
(Unaudited)**

**Note 1. Description of Business**

The Company is a targeted oncology company focused on developing novel cancer therapies targeting key signaling pathways that drive the formation and spread of cancer. The Company's programs focus on key cancer driver pathways that are well-validated in scientific literature but lack approved or effective therapies and therefore have the potential to address high unmet medical needs. By leveraging the Company's deep understanding of discovery chemistry, translational science, and patient-centric drug development, it has built a deep pipeline of wholly owned and partnered programs focused on genetically defined or biomarker-driven cancers, which enables it to target specific patient populations that the Company believes are most likely to respond to treatment with its product candidates. Since the Company commenced operations in 2016, it has discovered or developed five oncology programs that include four product candidates in either IND-enabling studies or clinical development.

The Company is subject to risks and uncertainties common to early-stage companies in the biotechnology industry, including, but not limited to, development by competitors of new technological innovations, dependence on key personnel, protection of proprietary technology, compliance with government regulations and ability to secure additional capital to fund operations. Product candidates currently under development will require significant additional research and development efforts, including extensive preclinical and clinical testing and regulatory approval prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel and infrastructure and extensive compliance-reporting capabilities. Because of the numerous risks and uncertainties associated with product development, the Company is unable to predict the timing or amount of increased expenses or when or if the Company will be able to achieve or maintain profitability. Even if the Company is able to generate revenue from product sales, the Company may not become profitable. If the Company fails to become profitable or is unable to sustain profitability on a continuing basis, then the Company may be unable to continue its operations at planned levels and be forced to reduce or terminate its operations. The Company expects to incur substantial operating losses and negative cash flows from operations for the foreseeable future.

In accordance with Accounting Standards Codification ("ASC") 205-40, *Going Concern*, the Company has evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern within one year after the date that the condensed consolidated financial statements are issued. As of September 30, 2020, the Company had an accumulated deficit of \$85.3 million. The Company expects to continue to generate operating losses in the foreseeable future. The Company has funded these losses principally through the sale of common and convertible preferred stock and from cash proceeds received in connection with the Company's collaboration with Bristol-Myers Squibb ("BMS") entered into in January 2019 (the "BMS Collaboration Agreement"). The Company expects that its cash and cash equivalents of \$55.9 million at September 30, 2020, together with the \$3.7 million of cash received through the acquisition of Amplify Medicines, Inc. ("Amplify") on October 1, 2020 and the net proceeds of \$116.4 million from the issuance of Series B redeemable convertible preferred stock on December 21, 2020, will be sufficient to fund its operating expenses and capital expenditure requirements for at least the next 12 months from issuance of the condensed consolidated financial statements.

In addition, the Company expects that it will seek additional funding through public or private financings, debt financing, collaboration agreements or government grants. The inability to obtain funding, as and when needed, could have a negative impact on the Company's financial condition and ability to pursue its business strategies, which may include amending, delaying, limiting, reducing, or terminating planned activities related to its product candidates.



## Note 2. Summary of Significant Accounting Policies

**Basis of presentation:** The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries, Arrys Therapeutics, Inc. (“Arrys”) and Ikena Oncology Securities Corporation. All intercompany balances and transactions have been eliminated in consolidation. These consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”). Any reference in these notes to applicable guidance is meant to refer to the authoritative U.S. GAAP as found in the Accounting Standards Codification (“ASC”) and Accounting Standards Update (“ASU”) of the Financial Accounting Standards Board (“FASB”).

**Unaudited Interim Condensed Consolidated Financial Statements:** The accompanying condensed consolidated balance sheet as of September 30, 2020 and the condensed consolidated statements of operations and comprehensive loss, redeemable convertible preferred stock and stockholders’ equity (deficit) and cash flows for the nine months ended September 30, 2019 and 2020 are unaudited. The financial data and other information contained in the notes thereto as of and for the nine months ended September 30, 2019 and 2020 are also unaudited. The condensed consolidated balance sheet data as of December 31, 2019 was derived from the Company’s audited consolidated financial statements included elsewhere in this prospectus.

Except as disclosed in *Recently Adopted Accounting Pronouncements*, the unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements as of and for the year ended December 31, 2019, and, in the opinion of management, reflect all adjustments necessary, all of which were normal and recurring, for the fair presentation of the Company’s financial position as of September 30, 2020, and the results of operations and cash flows for the nine months ended September 30, 2019 and 2020. These unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements as of and for the year ended December 31, 2019, and the notes thereto, included elsewhere in this prospectus.

**Use of Estimates:** The preparation of the Company’s financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Estimates and judgments are based on historical information and other market-specific or various relevant assumptions, including in certain circumstances, future projections, that management believes to be reasonable under the circumstances. Actual results could differ materially from estimates. Significant estimates and assumptions are used for, but not limited to the accruals for research and development expenses, research and development revenue under collaboration agreement, stock-based compensation expense and the determination of fair value of equity instruments and intangible assets acquired in an asset acquisition. The Company utilized various valuation methodologies in accordance with the framework of the 2013 American Institute of Certified Public Accountants Technical Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation*, to estimate the fair value of its equity awards. The Company evaluates its estimates and assumptions on an ongoing basis. All revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

**Segments:** Operating segments are defined as components of an entity for which separate financial information is available and that is regularly reviewed by the Chief Operating Decision Maker (“CODM”) in deciding how to allocate resources to an individual segment and in assessing performance. The Company’s CODM is its Chief Executive Officer. The Company has determined it operates in a single operating segment and has one reportable segment. All long-lived assets of the Company reside in the United States.

**Fair Value of Financial Instruments:** The amounts reported for cash equivalents, accounts payable and accrued expenses approximate fair value because of their short maturities. The Company reports its investment securities at their estimated fair value based on a three-tier fair value hierarchy to prioritize the inputs used in our fair value measurements. These tiers include: Level 1, defined as observable inputs such as quoted prices in active markets

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for identical assets; Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and Level 3, defined as unobservable inputs in which little or no market data exists. The Company has not historically held any Level 2 or Level 3 investments. The Company recognizes transfers between levels of the fair value hierarchy on the date of the event or change in circumstances that caused the transfer.

**Cash and Cash Equivalents:** The Company considers all short-term, highly liquid investments with original maturities of 90 days or less at acquisition date to be cash equivalents.

**Restricted Cash:** Restricted cash is composed of amounts held on deposit related to the Company's lease arrangements. Restricted cash is classified as other assets as of September 30, 2020 based on terms of the underlying arrangement. There was no restricted cash as of December 31, 2019.

**Concentration of Credit Risk:** Financial instruments which potentially expose the Company to concentrations of credit risk include cash equivalents, marketable securities and accounts receivable. All of the Company's cash deposits are maintained at large, creditworthy financial institutions.

**Property and Equipment:** Property and equipment are recorded at cost and depreciated using the straight-line method over the estimated useful life of each asset. Lab equipment is depreciated over five years. Electronic equipment and software are depreciated over three years. Leasehold improvements are amortized over the shorter of their useful life or lease term. When an item is sold or retired, the costs and related accumulated depreciation are eliminated, and the resulting gain or loss, if any, is credited or charged to income in the statement of operations and comprehensive loss. Repairs and maintenance costs are expensed as incurred.

**Long-lived Assets:** Long-lived assets consist of property and equipment. The Company reviews the recoverability of its long-lived assets, including the related useful lives, whenever events or changes in circumstances indicate that the carrying amount of a long-lived asset might not be recoverable, based on undiscounted cash flows. If such assets are considered to be impaired, an impairment loss is recognized and is measured as the amount by which the carrying amount of the assets exceed their estimated fair value, which is measured based on the projected discounted future net cash flows arising from the assets. To date, the Company has not recorded any impairment losses on long lived assets.

**Income Taxes:** The Company utilizes the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the carrying amounts and the tax basis of assets and liabilities using the enacted statutory tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Recognition of deferred tax assets is limited to amounts for which, in the opinion of management, realization is considered more likely than not in future periods.

**Revenue Recognition:** The Company has generated revenue from a collaboration agreement as well as service agreements with related parties.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, ("Topic 606"), which amended the guidance for accounting for revenue from contracts with customers. Under Topic 606, an entity recognizes revenue when its customer obtains control of promised goods or services in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. The Company adopted Topic 606 in 2018.

To determine revenue recognition for arrangements that are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation.

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At contract inception, once the contract is determined to be within the scope of Topic 606, the Company assesses the goods or services promised within each contract and determine those that are performance obligations, then assesses whether each promised good or service is distinct. When the Company offers options for additional goods or services, such as to receive a license for intellectual property or for additional goods or services, the Company evaluates whether such options contain material rights that should be treated as additional performance obligations. Once performance obligations are identified, the Company then recognizes as revenue the amount of the transaction price that the Company allocated to the respective performance obligation when (or as) each performance obligation is satisfied, either at a point in time or over time. If the performance obligation is satisfied over time, the Company recognizes revenue based on the use of an input method.

Amounts received prior to revenue recognition are recorded as deferred revenue. Amounts expected to be recognized as revenue within the 12 months following the balance sheet date are classified as current portion of deferred revenue in the accompanying consolidated balance sheets. Amounts not expected to be recognized as revenue within the 12 months following the balance sheet date are classified as deferred revenue, net of current portion.

As of September 30, 2020, the Company had one collaborative agreement, the BMS Collaboration Agreement, which the Company entered into in January 2019. For a complete discussion of the accounting related to the BMS Collaboration Agreement, see Note 7, Collaboration Agreement with BMS.

**Research and Development Expense:** Research and development costs are expensed as incurred. Research and development expenses are comprised of costs incurred in performing research and development activities, including salaries, stock-based compensation and benefits, facilities costs, depreciation, third-party license fees, acquisition of technology, and external costs of outside vendors engaged to conduct preclinical development and discovery activities and trials. Research and development expense also includes the write-off of acquired in-process research (“IPR&D”) and development assets with no alternative future use.

**Asset Acquisitions:** The Company measures and recognizes asset acquisitions that are not deemed to be business combinations based on the cost to acquire the assets, which includes transaction costs, and the consideration is allocated to the items acquired based on a relative fair value methodology. Goodwill is not recognized in asset acquisitions. In an asset acquisition, the cost allocated to IPR&D assets with no alternative future use is charged to research and development expense at the acquisition date.

**Stock-Based Compensation:** The Company’s stock-based compensation program grants awards that may include stock options, restricted stock awards, restricted stock units, and other stock-based awards. The fair values of stock option grants are estimated as of the date of grant using a Black-Scholes option valuation model. The fair values of restricted stock awards and restricted stock units are based on the fair value of the Company’s common stock on the date of grant. The estimated fair values of the awards are expensed over the requisite service period, which is generally the vesting period of the award. For service-based awards that are subject to graded vesting, companies have the option to recognize compensation expense either on a straight-line or accelerated basis. The Company has elected to recognize compensation expense for these awards on a straight-line basis. The Company accounts for forfeitures as they occur. The Company classifies stock-based compensation expense in our consolidated statements of operations and comprehensive loss in the same manner in which the award recipient’s salary and related costs are classified or in which the award recipient’s service payments are classified.

The Company utilizes significant estimates and assumptions in determining the fair value of its common stock. The Company has utilized various valuation methodologies in accordance with the framework of the American Institute of Certified Public Accountants Technical Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation* (the “Practice Aid”), to estimate the fair value of its common stock. Each valuation methodology includes estimates and assumptions that require the Company’s judgment. These estimates and assumptions include a number of objective and subjective factors, including external market

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conditions, the superior rights and preferences of securities senior to the Company's common stock at the time of, and the likelihood of, achieving a liquidity event, such as an initial public offering or sale. Significant changes to the key assumptions used in the valuations could result in different fair values of common stock at each valuation date.

The Company's expected stock price volatility assumption is based on volatilities of similar entities whose share or option prices are publicly available. The Company uses the simplified method to estimate the expected life assumption. The risk-free interest rate is based on the yield of U.S. Treasury securities consistent with the expected life of the option. No dividend yield was assumed as the Company does not intend to pay dividends on its common stock.

**Comprehensive Loss:** Comprehensive loss includes net loss as well as other changes in stockholders' equity (deficit) that result from transactions and economic events other than those with stockholders. For the nine months ended September 30, 2019 and 2020, there were no differences between net loss and comprehensive loss.

**Deferred Issuance Costs:** Deferred issuance costs consist of legal, accounting and other third-party fees that are directly associated with in-process equity financings and remain deferred issuance costs until such financings are consummated. After consummation of the equity financing, these costs are recorded as a reduction to the proceeds generated as a result of the offering. Should the planned equity financing be abandoned, the deferred offering costs will be expensed immediately as a charge to operating expenses in the condensed consolidated statements of operations and comprehensive loss.

**Leases:** The Company adopted ASC Topic 842, *Leases* ("ASC 842") on January 1, 2020. At the inception of an arrangement, the Company determines whether the arrangement is or contains a lease based on the unique facts and circumstances present. Leases that are economically similar to the purchase of assets are generally classified as finance leases; otherwise the leases are classified as operating leases. The Company has elected not to recognize leases with an original term of one year or less on the balance sheet. Options to renew a lease are not included in the Company's assessment unless there is reasonable certainty that the Company will renew. Leases with a term greater than one year are recognized on the balance sheet as right-of-use assets, lease liabilities and, if applicable, long-term lease liabilities. Lease liabilities and their corresponding right-of-use assets are recorded based on the present value of lease payments over the expected remaining lease term. However, certain adjustments to the right-of-use asset may be required for items such as incentives received. The Company has elected as an accounting policy to combine lease and non-lease components, such as common area maintenance, for all classes of underlying assets. The interest rate implicit in lease contracts has not historically been readily determinable. As a result, the Company utilizes its incremental borrowing rates, which are the rates incurred to borrow on a collateralized basis over a similar term an amount equal to the lease payments in a similar economic environment. To estimate its incremental borrowing rate, a credit rating applicable to the Company is estimated using synthetic credit rating analysis since the Company does not currently have a rating agency-based credit rating.

Prior to adoption of ASC 842, the Company recognized lease expense straight line based the average of the remaining term of payments with an adjustment to deferred rent asset or liability based on the timing in payments in relation to straight line rent expense.

**Emerging Growth Company Status:** The Company is an "emerging growth company," ("EGC") as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"), and the Company may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not EGCs. As an EGC, the Company can elect to take advantage of the extended transition period afforded by the JOBS Act for the implementation of new or revised accounting standards. The Company has elected to use the extended transition period for complying with new or revised accounting standards, and as a result of this election, the Company's consolidated financial statements may not be comparable to companies that comply with public company FASB standards' effective dates. The Company will remain an EGC until the last day of the

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fiscal year in which the fifth anniversary of the date of the first sale of common equity securities of the Company under an effective Securities Act registration statement occurs, although if the market value of the Company's common stock that is held by non-affiliates exceeds \$700 million as of any June 30 before that time or if the Company has annual gross revenue of \$1.07 billion or more in any fiscal year, the Company would cease to be an EGC as of December 31 of the applicable year. The Company would cease to be an EGC if it issued more than \$1 billion of non-convertible debt over a three-year period.

### **Recently Adopted Accounting Pronouncements:**

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)* ("ASU 2016-02"), as subsequently amended which requires an entity to recognize assets and liabilities arising from a lease for both financing (formerly referred to as capital) and operating leases. ASU 2016-02 also requires new qualitative and quantitative disclosures to help investors and other financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases. The Company adopted this ASU as of January 1, 2020 using the required modified retrospective approach and utilizing the effective date as its date of initial application. As a result, prior periods are presented in accordance with the previous guidance in ASC 840, *Leases* ("ASC 840"). In addition, the standard allows for certain practical expedients in transition to ASC 842, including the package of practical expedients. The Company elected to utilize the package of practical expedients which allowed the Company to not reassess the following: (i) whether any expired or existing contracts contained leases; (ii) the lease classification for any expired or existing leases; and (iii) the treatment of initial direct costs for any existing leases. The adoption of this standard resulted in the recognition of right-of-use assets and operating lease liabilities of \$1.0 million and \$1.0 million respectively, on the Company's consolidated balance sheet at adoption as of January 1, 2020.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326)—Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). The provisions of ASU 2016-13 modify the impairment model to utilize an expected loss methodology in place of the currently used incurred loss methodology and require a consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The Company early adopted ASU 2016-13 as of January 1, 2020 and it did not have a significant impact on its financial position or results of operation.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"). The Company adopted ASU 2018-13 as of January 1, 2020 and it did not have a significant impact on its financial position or results of operation.

In August 2018, the FASB issued ASU 2018-15, *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* ("ASU 2018-15"). The new standard will align the requirements for capitalizing implementation costs for hosting arrangements (services) with costs for internal-use software (assets). As a result, certain implementation costs incurred in hosting arrangements will be deferred and amortized. The Company adopted ASU 2018-15 as of January 1, 2020 and it did not have a significant impact on its financial position or results of operation.

In April 2019, the FASB issued ASU 2019-04, *Codification Improvements to Topic 326, Financial Instruments—Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments* ("ASU 2019-04"). This update provides clarifications for three topics related to financial instruments accounting, some of which apply to the Company. The Company adopted ASU 2019-04 as of January 1, 2020 and it did not have a significant impact on its financial position or results of operation.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740)—Simplifying the Accounting for Income Taxes* ("ASU 2019-12"), as part of its initiative to reduce complexity in the accounting standards. The amendments in ASU 2019-12 eliminate certain exceptions related to the approach for intraperiod tax allocation,

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the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. ASU 2019-12 also clarifies and simplifies other aspects of the accounting for income taxes. The Company early adopted ASU 2019-12 as of January 1, 2020 and it did not have a significant impact on its financial position or results of operation.

### Recently Issued Accounting Pronouncements:

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies and adopted by us as of the specified effective date. Unless otherwise discussed, the Company believes that the impact of recently issued standards that are not yet effective will not have a material impact on our consolidated financial statements and disclosures.

### Note 3. Fair Value Measurements

The following table presents information about the Company's financial assets measured at fair value on a recurring basis and indicate the level of the fair value hierarchy utilized to determine such fair values (in thousands):

	Fair Value Measurements as of December 31, 2019 using:			
	Level 1	Level 2	Level 3	Total
<b>Cash equivalents:</b>				
Money market funds	\$81,832	\$ —	\$ —	\$81,832
Total cash equivalents	<u>\$81,832</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$81,832</u>

	Fair Value Measurements as of September 30, 2020 using:			
	Level 1	Level 2	Level 3	Total
<b>Cash equivalents:</b>				
Money market funds	\$55,613	\$ —	\$ —	\$55,613
Total cash equivalents	<u>\$55,613</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$55,613</u>

During the year ended December 31, 2019 and nine months ended September 30, 2020, there were no transfers between Level 1, Level 2 and Level 3.

### Note 4. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consisted of the following at December 31, 2019 and September 30, 2020 (in thousands):

	December 31, 2019	September 30, 2020
Clinical, manufacturing and scientific development	\$ 1,856	\$ 2,330
Other	1,266	492
	<u>\$ 3,122</u>	<u>\$ 2,822</u>

**Note 5. Property and Equipment, net**

Property and equipment consisted of the following at December 31, 2019 and September 30, 2020 (in thousands):

	December 31, 2019	September 30, 2020
Property and equipment:		
Lab equipment	\$ 951	\$ 1,067
Leasehold improvements	160	288
Electronic equipment and software	46	46
Total property and equipment	1,157	1,401
Less: accumulated depreciation	(388)	(613)
Property and equipment, net	<u>\$ 769</u>	<u>\$ 788</u>

Depreciation expense for the nine months ended September 30, 2019 and 2020 was \$0.2 million and \$0.2 million, respectively. There were no impairments for nine months ended September 30, 2019 and 2020.

**Note 6. Accrued Expenses and Other Current Liabilities**

Accrued expenses and other current liabilities consist of the following at December 31, 2019 and September 30, 2020 (in thousands):

	December 31, 2019	September 30, 2020
Employee compensation	\$ 1,040	\$ 1,280
Research and development expenses	1,174	1,322
Professional fees	344	457
Current portion of deferred rent	121	—
	<u>\$ 2,679</u>	<u>\$ 3,059</u>

**Note 7. Collaboration Agreement and Stock Purchase Agreement with BMS**

In January 2019, the Company entered into the BMS Collaboration Agreement with Celgene Corporation, which was acquired by BMS in November 2019, whereby the Company will carry out initial research and development activities with the goal of identifying and developing drug candidates for certain cancer types. Concurrent with execution of the BMS Collaboration Agreement, the Company entered into a stock purchase agreement with BMS, which resulted in the issuance of 14,545,450 shares of Series A-1 Preferred Stock (the “Stock Purchase Agreement”).

*Agreement Structure*

Under the BMS Collaboration Agreement, the Company will conduct exploratory and discovery activities, with the goal of identifying product candidates for certain targets, which are the kynurenine, which the Company is developing as IK-412, and the aryl hydrocarbon receptor (“AHR”), which the Company is developing as IK-175. The Company is obligated to complete research and development activities through completion of a Phase 1b clinical trial for each program. BMS has the option to receive a global-development, manufacture and commercialization license for the product candidate. Subsequent to the delivery of a license, BMS is responsible for the worldwide development, manufacturing and commercialization of these product candidates.

BMS paid the Company a total of \$95.0 million in aggregate upfront consideration related to the BMS Collaboration Agreement and Stock Purchase Agreement. The Company is eligible to receive \$50.0 million, in

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case of an exercise of its option with respect to IK-175, and \$40.0 million, in case of an exercise of its option with respect to IK-412. If the Company does not complete a Phase 1b clinical trial by the end of the research term, the Company may provide a data package to BMS to support the decision to exercise the option for an additional \$0.25 million. Upon the exercise of the delivery of each license, the Company becomes eligible to receive up to \$450 million in milestone payments as well as a tiered royalty on worldwide sales from the high single to low double digits.

### *Accounting Considerations of the Agreement*

The BMS Collaboration Agreement and the Stock Purchase Agreement were executed concurrently and in contemplation of each other. The issuance of Series A-1 Preferred Stock was initially accounted for at fair value. The purchase price for the Series A-1 Preferred Stock was considered to be at a discount from fair value, and therefore \$1.8 million of the upfront from the BMS Collaboration Agreement was allocated to the equity arrangement.

The Company determined that the BMS Collaboration Agreement represented a contract with a customer and should be accounted for in accordance with ASC 606. The Company identified the two performance obligations, which are research and development services for IK-412 and for IK-175. The options to receive worldwide development and commercialization licenses for the two targets and the option to receive manufacturing services in the future were determined to not provide any material rights to the customer and are therefore not considered to be performance obligations. The arrangement also contains certain de minimis items, including participation on joint oversight committees.

The Company identified \$78.7 million of total transaction price which represents the upfront consideration allocated to the revenue arrangement. Additional consideration to be paid to the Company upon exercise of a right to receive a license or potential milestone and royalty payments are excluded from the transaction price as they relate to amounts that can only be achieved subsequent to the exercise of an options and are outside of the initial contact term.

Based on the distinct performance obligations identified above, the Company allocated the \$78.7 million transaction price based on relative estimated standalone selling prices of each of its performance obligations as follows:

- \$41.2 million for research and development services for IK-175; and
- \$37.5 million for research and development services for IK-412.

The Company determined the estimated standalone selling price for the research and development services based on internal estimates of the costs to perform the services, including expected internal expenses and expenses with third parties, marked up to include a reasonable profit margin. Significant inputs used to determine the total expense of the research and development activities include, the length of time required and the number and cost of various studies that will be performed to complete the applicable development plan.

The Company is recognizing revenue related to each of its performance obligations as the research and development services are performed. The Company recognizes revenue related to research and development services performed using an input method by calculating costs incurred at each period end relative to total costs expected to be incurred.

During the nine months ended September 30, 2019 and 2020, the Company recognized revenue of \$10.9 million and \$9.1 million from the BMS Collaboration Agreement, respectively. The consolidated balance sheet at September 30, 2020 included deferred revenue of \$55.8 million related this agreement, of which \$23.1 million and \$32.7 million was classified as current and non-current, respectively. This amount is expected to be recognized as performance obligations are satisfied through the completion of the research and development services for IK-175 and IK-412.



**Note 8. Redeemable Convertible Preferred Stock**

As of December 31, 2019 and September 30, 2020, the authorized capital stock of the Company includes 75,727,268 shares of redeemable convertible preferred stock, consisting of 28,000,000 shares of Series A Redeemable Convertible Preferred Stock (“Series A Preferred Stock”) and 47,727,268 shares of Series A-1 Redeemable Convertible Preferred Stock (“Series A-1 Preferred Stock”), collectively known as Redeemable Convertible Preferred Stock.

Redeemable convertible preferred stock consists of the following:

As of December 31, 2019				
	Shares Authorized	Shares Issued and Outstanding	Carrying Value	Aggregate Liquidation Preference
	(in thousands, except share data)			
Series A	28,000,000	28,000,000	\$ 27,832	\$ 28,000
Series A-1	47,727,268	47,727,268	51,035	47,727
	<u>75,727,268</u>	<u>75,727,268</u>	<u>\$ 78,867</u>	<u>\$ 75,727</u>

As of September 30, 2020				
	Shares Authorized	Shares Issued and Outstanding	Carrying Value	Aggregate Liquidation Preference
	(in thousands, except share data)			
Series A	28,000,000	28,000,000	\$ 27,832	\$ 28,000
Series A-1	47,727,268	47,727,268	51,035	47,727
	<u>75,727,268</u>	<u>75,727,268</u>	<u>\$ 78,867</u>	<u>\$ 75,727</u>

The Preferred Stock has the following characteristics as of September 30, 2020:

(a) Voting

On any matter presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the Company’s Amended and Restated Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class.

The holders of outstanding shares of Preferred Stock shall be entitled to elect three directors of the Company. The investors have agreed that two of the directors are to be named by one investor and the other director is to be named by a separate investor and have certain other special voting rights.

(b) Dividends

The holders of Preferred Stock are entitled to an 8% non-cumulative dividend. Dividends are payable only when, as and if declared by the Board. No dividends are payable to the common stockholders unless a dividend is also paid to Preferred Stockholders equal to at least the amount that would be received if the shares of Preferred Stock were converted into common stock.

Through September 30, 2020, no dividends have been declared or paid by the Company.

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### (c) Liquidation Preference

In the event of any voluntary or involuntary liquidation, dissolution, or winding up of the Company, or upon the event of certain other deemed liquidation events, holders of shares of Preferred Stock then outstanding shall be entitled to receive the greater of (i) an amount per share equal to the Preferred Stock original issue price, plus any dividends declared but unpaid thereon or (ii) the amount that would be received if the Preferred Stock was converted into common stock just prior to the liquidation event.

### (d) Conversion

Each share of Preferred Stock shall be convertible into shares of common stock at the option of the stockholder, at any time, at a rate of one for one and are automatically converted upon a qualified initial public offering or upon written consent of at least 75% of the holders of the outstanding shares of Preferred Stock. The conversion ratio is initially set at one for one, but may be adjusted for certain issuances of additional shares of Common Stock, stock splits, stock combinations, certain dividends and distributions, and mergers and reorganizations.

The Preferred Stock is eligible to be redeemed upon certain deemed-liquidation events which are outside of the Company's control. As a result, the shares are presented outside of stockholders' deficit. The shares will be accreted to redemption value if the events that would result in a deemed-liquidation event are considered probable.

### Note 9. Common Stock

At December 31, 2019 and September 30, 2020, the Company had 113,372,392 and 113,795,082 shares of common stock authorized, respectively, of which 18,967,681 and 19,021,056 were issued and outstanding as of December 31, 2019 and September 30, 2020, respectively.

**Voting:** The holders of shares of common stock are entitled to one vote for each share of common stock held at all meetings of stockholders and written action in lieu of meetings; there is no cumulative voting. The holders of outstanding shares of common stock shall be entitled to elect two directors of the Company.

**Liquidation:** After payment to the holders of shares of Preferred Stock of their liquidation preferences, the remaining assets of the Company are distributed to the holders of common stock.

### Note 10. Stock-Based Compensation

As of December 31, 2019, the number of shares reserved for issuance under the Company's 2016 Stock Incentive Plan (the "Plan") was 18,281,483. On July 23, 2020, the number of shares reserved under the Plan was increased by 968,152 shares to 19,249,635, as approved by the Board of Directors.

As of September 30, 2020, no shares were available for grant under the Plan. The Plan provides that equity awards may be granted to employees and nonemployees. The vesting periods for equity awards, which generally is four years, are determined by the Board of Directors. The contractual term for stock option awards is ten years.

Total stock-based compensation expense recorded during the nine-month periods ended September 30, 2019 and 2020 was as follows (in thousands):

	<u>2019</u>	<u>2020</u>
Research and development	\$320	\$ 506
General and administrative	489	641
Total share-based compensation expense	<u>\$809</u>	<u>\$1,147</u>

The weighted-average fair value of the stock options granted during the nine months ended September 30, 2019 and 2020, was \$0.36 and \$0.49 per share, respectively. As of September 30, 2020, the total unrecognized stock-

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based compensation balance for unvested options was \$4.1 million which is expected to be recognized over 2.0 years.

The following table summarizes stock option activity under the Plan for the nine months ended September 30, 2020.

	Number of Options	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding as of December 31, 2019	17,516,387	\$ 0.47	8.86	\$ 2,842
Granted	1,828,293	0.63		
Exercised	(53,375)	0.39		
Cancelled or forfeited	(244,547)	0.56		
Outstanding as of September 30, 2020	19,046,758	\$ 0.48	8.26	\$ 5,479
Options exercisable as of September 30, 2020	8,497,717	\$ 0.41	7.76	\$ 3,098
Options unvested as of September 30, 2020	10,549,041	\$ 0.54	8.67	\$ 2,381

The intrinsic value of options exercised for nine months ended September 30, 2019 and 2020 was \$70 thousand and \$13 thousand, respectively.

The fair value of each option award granted during the nine months ended September 30, 2020 is estimated on the date of grant using the Black-Scholes option pricing model and the weighted average assumptions noted in the following table:

	Nine Months Ended September 30, 2020
Weighted average risk-free interest rate	0.38%
Expected dividend yield	0.00%
Expected option term (in years)	6.03
Expected stock price volatility	73.41%

### Note 11. Income Taxes

Income taxes for the nine months ended September 30, 2019 and 2020 have been calculated based on an estimated annual effective tax rate and certain discrete items. For the nine months ended September 30, 2019 and 2020, the Company recorded an income tax expense of \$0 million. The Company will recognize interest and penalties related to uncertain tax positions in income tax expense.

On March 27, 2020, the CARES Act was enacted in response to the COVID-19 pandemic. Among other things, the CARES Act permits corporate taxpayers to carryback net operating losses (“NOLs”) originating in 2018 through 2020 to each of the five preceding tax years. Further, the CARES Act retroactively and temporarily (for taxable years beginning before January 1, 2021) suspends application of the 80%-of-income limitation on the use of NOLs.

The Company has never been examined by the Internal Revenue Service or any other jurisdiction for any tax years and, as such, all years within the applicable statutes of limitations are potentially subject to audit.

### Note 12. Research License Agreements

During 2015, the Company entered into an exclusive patent license agreement (the “UT Austin License”) to license certain technologies and intellectual property rights from The University of Texas at Austin (the “University”), an entity affiliated with a director of the Company at the time of the agreement. The UT Austin License shall remain in effect until the expiration or abandonment of the last to expire technologies and intellectual property rights. The Company shall pay License Maintenance fees annually of \$40 thousand.

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Additionally, the Company shall make additional milestone payments in the aggregate of \$4.7 million to the University upon meeting certain development milestones during the term of the UT Austin License. The Company will pay the University royalties as defined in the UT Austin License on any commercialized product sales related to the licensed technology in a percentage in the low single digits. The Company will also be responsible for reimbursing the University for certain patent-related costs incurred on its behalf. The Company incurred expenses totaling \$87 thousand and \$55 thousand related to patent reimbursement costs in the nine months ended September 30, 2019 and 2020, respectively, and incurred \$40 thousand in expense related to licenses obtained from the party in the nine months ended September 30, 2020.

In 2018, the Company acquired IPR&D on an Arrys' immune-oncology candidate based on the intellectual property associated with Arrys' AskAt License Agreement (the "AskAt License") as part of the acquisition of Arrys. Total consideration allocated to the technology was \$28.5 million and was recognized as research and development expense upon the acquisition. The AskAt License is intended to be used by the Company in its future development of therapeutic drug candidates for eventual clinical development and commercialization. The Company shall make additional milestone payments to AskAt upon meeting certain development milestones totaling \$4 million, as well as certain sales event milestones ranging from \$50 million to \$250 million contingent on sales in a calendar year, during the term of the License. The Company will pay the AskAt royalties a percentage in the low single digits as defined in the License on any commercialized product sales related to the licensed technology.

### **Note 13. Leases**

In December 2018, the Company entered into an operating lease to lease approximately 13,170 square feet of office, laboratory and vivarium space at 50 Northern Ave, Boston, Massachusetts, expiring in December 31, 2020. In July 2020, the Company extended the term of the lease through February 2021. The monthly rent per the lease, exclusive of operating expenses and real estate taxes, is \$93 thousand, with the first payment of rent paid in January 2019. Under the terms of the lease, the Company received \$160 thousand towards a tenant improvement allowance.

The Company recorded rent expense of \$0.8 million for the nine months ended September 30, 2019. The Company recognizes rent expense on a straight-line basis over the lease period and recorded deferred rent for rent expense incurred but not yet paid and for tenant improvement allowance paid by the lessor, which resulted in a deferred balance of \$151 thousand at September 30, 2019.

On January 1, 2020, the Company adopted ASC 842. The components of the lease costs which are included in the condensed consolidated statements of operations and comprehensive loss for the nine months ended September 30, 2020 were as follows (in thousands):

	September 30, 2020
Operating lease costs	\$ 755
Variable lease costs	466
Total lease costs	<u>\$ 1,221</u>

Supplemental cash flow information relating to the Company's leases for the nine months ended September 30, 2020 was as follows (in thousands):

	September 30, 2020
Cash paid for amounts included in the measurement of lease liabilities (operating cash flows)	<u>\$ 745</u>

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The following table presents the weighted average remaining lease term and discount rate for its operating lease as September 30, 2020:

	<b>September 30, 2020</b>
Remaining lease term:	0.4 years
Discount Rate:	8.0%

The undiscounted future lease payments for the Company's operating lease as of September 30, 2020, were as follows (in thousands):

<u>Fiscal Year</u>	<u>Operating Leases</u>
2020 (excluding the nine months ended September 30, 2020)	\$ 280
2021	186
Total minimum lease payments	\$ 466
Less amounts representing interest or imputed interest	(6)
Present value of lease liabilities	\$ 460

On July 21, 2020, the Company entered into an operating lease agreement for 20,752 square feet of office, lab and animal care facility space located in Boston, Massachusetts for the Company's new corporate headquarters. The commencement date of the lease is estimated to be February 1, 2021 and the lease term is 63 months. The lease provides a three-month free rent period, which will commence on the lease commencement date. The base rent at commencement is \$145 thousand a month and escalates by 3% annually. The Company provided a letter of credit to secure their obligations under the lease in the initial amount of \$0.9 million that is recognized in other assets on the accompanying condensed consolidated balance sheets. The Company will recognize the right of use asset, operating lease liability and related lease costs beginning upon the commencement of the lease in 2021.

### **Note 14. Commitments and Contingencies**

The Company is also party to various agreements, principally relating to licensed technology, that require future payments relating to milestones not met at September 30, 2020 or royalties on future sales of specified products that have not yet occurred as of September 30, 2020.

### **Note 15. Related Party Transactions**

The Company entered into several agreements with investors and entities affiliated with an investor:

- 1) The Company received consulting services from an investor for \$135 thousand during the nine months ended September 30, 2019.

The Company entered into several agreements with a director and an entity affiliated with a director:

- 1) As discussed in Note 12 above, the Company has entered into a license agreement with the University, which was affiliated with a director of the Company at the time of the agreement
- 2) The Company has engaged the University to perform certain research services. The Company incurred expenses totaling \$87 thousand and \$55 thousand, respectively, related to patent reimbursement costs in the nine months ended September 30, 2019 and 2020, respectively and incurred \$40 thousand in expense related to licenses obtained from the party in the nine months ended September 30, 2020.
- 3) The Company received consulting services from a director for \$101 thousand during the nine months ended September 30, 2019. The Company did not receive consulting services from a director during the nine months ended September 30, 2020.

**Note 16. Net Loss per Share Attributable to Common Stockholders**

Basic and diluted loss per share is computed by dividing net loss attributable to common stockholders by the weighted-average common shares outstanding.

The Company's potentially dilutive securities, which include redeemable convertible preferred stock, restricted stock, and stock options, have been excluded from the computation of diluted net loss per share as the effect would be to reduce the net loss per share. Therefore, the weighted-average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The Company excluded the following from the computation of diluted net loss per share attributable to common stockholders at September 30, 2019 and 2020 because including them would have had an anti-dilutive effect:

	As of September 30,	
	2019	2020
Redeemable Convertible Preferred Stock	75,727,268	75,727,268
Options to purchase Common Stock	15,759,146	19,046,758
Total	91,486,414	94,774,026

**Note 17. Subsequent Events**

The Company evaluated all events or transactions that occurred from September 30, 2020 through January 8, 2021, the date the condensed consolidated financial statements were available to be issued.

(a) *Common Stock and Preferred Stock Authorized for Issuance*

On October 1, 2020, the Board Amended the Company's Amended and Restated Certificate of Incorporation to increase the number of shares of Common Stock authorized for issuance to 200,000,000 shares. In addition, the Board amended the Company's Amended and Restated Certificate of Incorporation to increase the number of shares of Preferred Stock authorized for issuance to 83,590,362 shares, of which 28,000,000 are designated Series A Preferred Stock, 47,727,268 are designated Series A-1 Preferred Stock and 7,863,094 are designated Series A-2 Preferred Stock.

(b) *Amplify Medicines, Inc. Acquisition*

On October 1, 2020 (the "Acquisition Date"), the Company acquired Amplify, a related party. Pursuant to the terms and conditions of the Agreement and Plan of Merger ("the Merger Agreement"), the Company issued a total of 7,863,094 shares of Series A-2 Redeemable Convertible Preferred Stock at a fair value of \$1.31 for aggregate fair value of approximately \$10.3 million, net of issuance costs and 3,048,764 shares of Common Stock with a fair value of \$1.03 for a total fair value of \$3.1 million related to the Common Stock issued to the shareholders of Amplify as part of the Merger Agreement.

Voting Rights

Each holder of outstanding shares of Series A-2 Redeemable Convertible Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the Company's Amended and Restated Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class.

Dividends

The holders of Series A-2 Redeemable Convertible Preferred Stock are entitled to an 8% non-cumulative dividend. Dividends are payable only when, as and if declared by the Board. No

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dividends are payable to the common stockholders unless a dividend is also paid to Preferred Stockholders equal to at least the amount that would be received if the shares of Preferred Stock were converted into common stock.

### Liquidation Preference

In the event of any voluntary or involuntary liquidation, dissolution, or winding up of the Company, or upon the event of certain other deemed liquidation events, holders of Series A-2 Redeemable Convertible Preferred Stock then outstanding shall be entitled to receive the greater of (i) an amount per share equal to \$0.8266466, plus any dividends declared but unpaid thereon or (ii) the amount that would be received if the Preferred Stock was converted into common stock just prior to the liquidation event.

### Conversion

Each share of Preferred Stock shall be convertible into shares of common stock at the option of the stockholder, at any time, at a rate of one for one and are automatically converted upon a qualified initial public offering or upon written consent of at least 75% of the holders of the outstanding shares of Preferred Stock. The conversion ratio is initially set at one for one, but may be adjusted for certain issuances of additional shares of Common Stock, stock splits, stock combinations, certain dividends and distributions, and mergers and reorganizations.

The Preferred Stock is eligible to be redeemed upon certain deemed-liquidation events which are outside of the Company's control. As a result, the shares will be presented outside of stockholders' deficit. The shares will be accreted to redemption value if the events that would result in a deemed-liquidation event are considered probable.

The Company first assessed if the acquisition represented a transaction which was under common control or common ownership under both the variable interest entity guidance and the voting interest entity guidance. While Amplify is a related party to the Company, it is not under common control or common ownership with the Company. The Company next assessed if Amplify, represented an asset or a business under FASB ASC Topic 805, *Business Combinations ASC 805*, as amended by ASU 2017-01. Under ASC 805, the Company determined that Amplify did not constitute a business since substantially all of the fair value of the gross assets acquired is concentrated in a single asset, which is the intellectual property for the lead product candidate in development by Amplify. The intellectual property acquired from Amplify is at an early stage of development and will require a significant investment of time and capital for development. There is no assurance that the Company will be successful in completing the additional research and development activities. The intellectual property acquired is considered to have no alternative future use, and therefore the cost of acquisition allocated to it will be expensed as incurred.

The transaction price was determined and allocated as follows (in thousands):

<b>Transaction Price</b>	
Fair value of equity instruments issued	<u>\$13,441</u>
<b>Transaction Price Allocation</b>	
In-process research and development	\$10,689
Cash acquired	3,688
Prepaid expenses and other assets	34
Liabilities assumed	(970)
Total transaction price	<u>\$13,441</u>

The fair value of the consideration issued was based on a probability weighted model that utilized two different scenarios that utilized a market approach.

During the three-months ended December 31, 2020, the Company recognized the write-off of the acquired in-process research and development intellectual property of \$10.7 million within Research and development expense.

(c) *Common Stock and Preferred Stock Authorized for Issuance*

On December 18, 2020, the Board amended the Company's Amended and Restated Certificate of Incorporation to increase the number of shares of Common Stock authorized for issuance to 230,000,000 shares. In addition, the Board amended the Company's Amended and Restated Certificate of Incorporation to increase the number of shares of Preferred Stock authorized for issuance to 169,396,576 shares, of which 28,000,000 are designated Series A Preferred Stock, 47,727,268 are designated Series A-1 Preferred Stock, 7,863,094 are designated Series A-2 Preferred Stock and 85,806,214 are designated Series B Preferred Stock.

(d) *Series B Redeemable Convertible Preferred Stock Issuance*

On December 21, 2020, the Company issued a total of 85,806,214 shares of Series B Redeemable Convertible Preferred Stock at a purchase price of \$1.3985 per share for aggregate proceeds of approximately \$116.4 million, net of issuance costs.

*Voting Rights*

Each holder of outstanding shares of Series B Redeemable Convertible Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Series B Redeemable Convertible Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the Company's Amended and Restated Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class.

*Dividends*

The holders of Series B Redeemable Convertible Preferred Stock are entitled to an 8% non-cumulative dividend in seniority to the Series A, A-1 and A-2 Redeemable Convertible Preferred Stock. Dividends are payable only when, as and if declared by the Board. No dividends are payable to the common stockholders unless a dividend is also paid to Preferred Stockholders equal to at least the amount that would be received if the shares of Preferred Stock were converted into common stock.

*Liquidation Preference*

In the event of any voluntary or involuntary liquidation, dissolution, or winding up of the Company, or upon the event of certain other deemed liquidation events, holders of shares of Series B Redeemable Convertible Preferred Stock then outstanding shall be entitled to receive the greater of (i) an amount per share equal to \$1.3985, plus any dividends declared but unpaid thereon or (ii) the amount that would be received if the Preferred Stock was converted into common stock just prior to the liquidation event.

*Conversion*

Each share of Preferred Stock shall be convertible into shares of common stock at the option of the stockholder, at any time, at a rate of one for one and are automatically converted upon a qualified initial public offering or upon written consent of at least 75% of the holders of the outstanding shares of Preferred Stock. The conversion ratio is initially set at one for one, but may be adjusted for certain issuances of additional shares of Common Stock, stock splits, stock combinations, certain dividends and distributions, and mergers and reorganizations.



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The Preferred Stock is eligible to be redeemed upon certain deemed-liquidation events which are outside of the Company's control. As a result, the shares will be presented outside of stockholders' deficit. The shares will be accreted to redemption value if the events that would result in a deemed-liquidation event are considered probable.

(e) *Option Plan Increase*

On December 18, 2020, the number of shares reserved under the Plan was increased by 18,014,373 shares to 37,264,008, as approved by the Board of Directors

**Shares**



**Common Stock**

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**PRELIMINARY PROSPECTUS**

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**Jefferies**

**Cowen**

**Credit Suisse**

**William Blair**

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, 2021

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**PART II****Information Not Required in Prospectus****Item 13. Other Expenses of Issuance and Distribution.**

The following table sets forth the fees and expenses, other than underwriting discounts and commissions, payable in connection with the registration of the common stock hereunder. All amounts are estimates except the SEC registration fee.

	<b>Amount to be Paid</b>
SEC registration fee	\$ *
FINRA filing fee	*
Nasdaq Global Market listing fee	*
Printing and mailing expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Transfer agent and registrar fees and expenses	*
Miscellaneous	*
<b>Total</b>	<b>\$ *</b>

\* To be completed by amendment.

**Item 14. Indemnification of Directors and Officers.**

Section 145 of the Delaware General Corporation Law, or DGCL, authorizes a corporation to indemnify its directors and officers against liabilities arising out of actions, suits and proceedings to which they are made or threatened to be made a party by reason of the fact that they have served or are currently serving as a director or officer to a corporation. The indemnity may cover expenses (including attorneys' fees) judgments, fines and amounts paid in settlement actually and reasonably incurred by the director or officer in connection with any such action, suit or proceeding. Section 145 permits corporations to pay expenses (including attorneys' fees) incurred by directors and officers in advance of the final disposition of such action, suit or proceeding. In addition, Section 145 provides that a corporation has the power to purchase and maintain insurance on behalf of its directors and officers against any liability asserted against them and incurred by them in their capacity as a director or officer, or arising out of their status as such, whether or not the corporation would have the power to indemnify the director or officer against such liability under Section 145.

We have adopted provisions in our fifth amended and restated certificate of incorporation to be in effect upon the closing of this offering and amended and restated by-laws to be in effect upon the effectiveness of this registration statement of which this prospectus forms a part that limit or eliminate the personal liability of our directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any unlawful payments related to dividends or unlawful stock purchases, redemptions or other distributions; or
- any transaction from which the director derived an improper personal benefit.

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These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

In addition, the by-laws to be in effect upon the effectiveness of this registration statement provide that:

- we will indemnify our directors, officers and, in the discretion of our board of directors, certain employees to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and
- we will advance reasonable expenses, including attorneys' fees, to our directors and, in the discretion of our board of directors, to our officers and certain employees, in connection with legal proceedings relating to their service for or on behalf of us, subject to limited exceptions.

We have entered into indemnification agreements with each of our directors and intend to enter into such agreements with our executive officers. These agreements provide that we will indemnify each of our directors, our executive officers and, at times, their affiliates to the fullest extent permitted by Delaware law. We will advance expenses, including attorneys' fees (but excluding judgments, fines and settlement amounts), to each indemnified director, executive officer or affiliate in connection with any proceeding in which indemnification is available and we will indemnify our directors and officers for any action or proceeding arising out of that person's services as a director or officer brought on behalf of us or in furtherance of our rights. Additionally, certain of our directors or officers may have certain rights to indemnification, advancement of expenses or insurance provided by their affiliates or other third parties, which indemnification relates to and might apply to the same proceedings arising out of such director's or officer's services as a director referenced herein. Nonetheless, we have agreed in the indemnification agreements that our obligations to those same directors or officers are primary and any obligation of such affiliates or other third parties to advance expenses or to provide indemnification for the expenses or liabilities incurred by those directors are secondary.

We also maintain general liability insurance which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act of 1933, as amended, or the Securities Act.

The underwriting agreement filed as Exhibit 1.1 to this registration statement provides for indemnification of us and our directors and officers by the underwriters against certain liabilities under the Securities Act and the Securities Exchange Act of 1934.

### **Item 15. Recent Sales of Unregistered Securities.**

In the three years preceding the filing of this registration statement, we have issued the following securities that were not registered under the Securities Act:

#### **(a) Issuances of Capital Stock**

Set forth below is information regarding securities we have issued within the past three years that were not registered under the Securities Act.

In January 2019, we sold an aggregate of 14,545,450 shares of our Series A-1 convertible preferred stock to Celgene Corporation (now Bristol-Myers Squibb Company) at a purchase price of \$1.00 per share for \$14.5 million.

In October 2020, we issued 7,863,094 shares of our Series A-2 preferred stock and 3,048,764 in connection with the AMI Merger Agreement.

In December 2020, we sold an aggregate of 85,806,214 shares of Series B convertible preferred stock to 23 investors at a purchase price of \$1.3985 for \$120.0 million.

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No underwriters were involved in the foregoing sales of securities. Unless otherwise stated, the sales of securities described above were deemed to be exempt from registration pursuant to Section 4(a)(2) of the Securities Act, including Regulation D and Rule 506 promulgated thereunder, as transactions by an issuer not involving a public offering. All of the purchasers in these transactions represented to us in connection with their purchase that they were acquiring the securities for investment and not distribution, that they could bear the risks of the investment and could hold the securities for an indefinite period of time. Such purchasers received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration or an available exemption from such registration. All of the foregoing securities are deemed restricted securities for the purposes of the Securities Act.

### **(b) Grants and Exercises of Stock Options**

Through December 31, 2020, we have granted stock options to purchase an aggregate of 21,277,935 shares of our common stock, with an exercise price of \$0.16 to \$0.63 per share, to employees, directors and consultants pursuant to the 2016 Stock Incentive Plan, or the 2016 Plan. Since January 1, 2018, 288,376 shares of common stock have been issued upon the exercise of stock options pursuant to the 2016 Plan.

The issuances of the securities described above were deemed to be exempt from registration pursuant to Section 4(a)(2) of the Securities Act or Rule 701 promulgated under the Securities Act as transactions pursuant to compensatory benefit plans. The shares of common stock issued upon the exercise of options are deemed to be restricted securities for purposes of the Securities Act.

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### **Item 16. Exhibits and Financial Statement Schedules.**

#### (a) Exhibits

<u>Exhibit Number</u>	<u>Description</u>
1.1*	Form of Underwriting Agreement.
3.1	Fourth Amended and Restated Certificate of Incorporation of Registrant, as currently in effect.
3.2*	Form of Fifth Amended and Restated Certificate of Incorporation of Registrant, to be in effect immediately prior to the completion of this offering.
3.3	Bylaws of Registrant, as currently in effect.
3.4*	Form of Amended and Restated Bylaws of Registrant, to be in effect upon the effectiveness of this registration statement.
4.1*	Specimen Common Stock Certificate.
4.2†	Fourth Amended and Restated Investors' Rights Agreement.
5.1*	Opinion of Goodwin Procter LLP.
10.1#*	2016 Stock Incentive Plan, and form of award agreements thereunder.
10.2#*	2021 Stock Option and Grant Plan, and form of award agreements thereunder.
10.3#*	2021 Employee Stock Purchase Plan.
10.4#*	Non-Employee Director Compensation Policy.
10.5#*	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers.
10.6#*	Form of Amended and Restated Employment Agreement.
10.8*†	License Agreement by and between the Registrant and AskAt, Inc., dated December 14, 2017, as amended.
10.9*†	Master Collaboration Agreement by and between the Registrant and Celgene Corporation (now Bristol-Myers Squibb), dated January 14, 2019.
10.10*†	Patent License Agreement by and between the Registrant and The University of Texas at Austin, on behalf of the Board of Regents of the University of Texas System, dated March 29, 2015, as amended.
21.1	List of Subsidiaries of Registrant.
23.1*	Consent of Ernst & Young, independent registered public accounting firm.
23.2*	Consent of Goodwin Procter LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included on signature page).

\* To be filed by amendment.

† Portions of this exhibit (indicated by asterisks) will be omitted in accordance with the rules of the Securities and Exchange Commission.

# Indicates a management contract or any compensatory plan, contract or arrangement.

#### (b) Financial Statements Schedules:

Schedules have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

**Item 17. Undertakings.**

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, or the Act, may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is therefore unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

The Registrant hereby undertakes that:

- (a) For purposes of determining any liability under the Act, the information omitted from a form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Act, shall be deemed to be part of this registration statement as of the time it was declared effective.
- (b) For the purpose of determining any liability under the Securities Act of 1933, as amended, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Boston, Commonwealth of Massachusetts, on the \_\_\_\_\_ day of \_\_\_\_\_, 2021.

### IKENA ONCOLOGY, INC.

By: \_\_\_\_\_  
Name: Mark Manfredi, Ph.D.  
Title: President and Chief Executive Officer

## POWER OF ATTORNEY AND SIGNATURES

Each individual whose signature appears below hereby constitutes and appoints Mark Manfredi, Ph.D. and Douglas R. Carlson as such person's true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for such person in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement (or any Registration Statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement and power of attorney have been signed by the following persons in the capacities and on the date indicated.

<u>Name</u>	<u>Title</u>	<u>Date</u>
_____ Mark Manfredi, Ph.D.	President, Chief Executive Officer and Director <i>Principal Executive Officer</i>	, 2021
_____ Douglas R. Carlson	Chief Financial Officer <i>Principal Financial Officer and Principal Accounting Officer</i>	, 2021
_____ Ron Renaud	Director	, 2021
_____ David Bonita, M.D.	Director	, 2021
_____ Iain D. Dukes, D.Phil.	Director	, 2021
_____ Jean-François Formela, M.D.	Director	, 2021
_____ Otello Stampacchia, Ph.D.	Director	, 2021



FOURTH AMENDED AND RESTATED  
CERTIFICATE OF INCORPORATION  
OF  
IKENA ONCOLOGY, INC.

Ikena Oncology, Inc., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the “**General Corporation Law**”),

DOES HEREBY CERTIFY:

1. That the name of this corporation is Ikena Oncology, Inc., and that this corporation was originally incorporated pursuant to the General Corporation Law on March 2, 2016, under the name Kyn Therapeutics Inc., that an Amended and Restated Certificate of Incorporation was filed on December 18, 2018, that a Second Amended and Restated Certificate of Incorporation was filed on January 11, 2019 and that a Third Amended and Restated Certificate of Incorporation was filed on October 1, 2020.

2. That the Board of Directors of this corporation duly adopted resolutions proposing to amend and restate the Third Amended and Restated Certificate of Incorporation of this corporation, declaring said amendment and restatement to be advisable and in the best interests of this corporation and its stockholders, and authorizing the appropriate officers of this corporation to solicit the consent of the stockholders therefor, which resolution setting forth the proposed amendment and restatement is as follows:

RESOLVED, that the Third Amended and Restated Certificate of Incorporation of this corporation be amended and restated in its entirety to read as follows:

**FIRST:** The name of this corporation is Ikena Oncology, Inc. (the “**Corporation**”).

**SECOND:** The address of the registered office of the Corporation in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

**THIRD:** The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law.

**FOURTH:** The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 230,000,000 shares of Common Stock, \$0.001 par value per share (“**Common Stock**”), and (ii) 169,396,576 shares of Preferred Stock, \$0.001 par value per share (“**Preferred Stock**”), of which 28,000,000 shall be designated Series A Preferred Stock (the “**Series A Preferred Stock**”), 47,727,268 shall be designated Series A-1 Preferred Stock (the “**Series A-1 Preferred Stock**”), 7,863,094 shall be designated Series A-2 Preferred Stock (the “**Series A-2 Preferred Stock**”) and 85,806,214 shall be designated Series B Preferred Stock (the “**Series B Preferred Stock**”).

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

#### A. COMMON STOCK

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights, powers and preferences of the holders of the Preferred Stock set forth herein.

2. Voting. The holders of the Common Stock are entitled to one vote for each share of Common Stock held at all meetings of stockholders (and written actions in lieu of meetings); provided, however, that, except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to the Fourth Amended and Restated Certificate of Incorporation of the Corporation (as amended from time to time, this “**Certificate of Incorporation**”) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to this Certificate of Incorporation or pursuant to the General Corporation Law. There shall be no cumulative voting. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by (in addition to any vote of the holders of one or more series of Preferred Stock that may be required by the terms of this Certificate of Incorporation) the affirmative vote of the holders of shares of capital stock of the Corporation representing a majority of the votes represented by all outstanding shares of capital stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

#### B. PREFERRED STOCK

28,000,000 shares of the authorized Preferred Stock of the Corporation are hereby designated “**Series A Preferred Stock**” 47,727,268 shares of authorized Preferred Stock are hereby designated “**Series A-1 Preferred Stock**”, 7,863,094 shares of authorized Preferred Stock are hereby designated “**Series A-2 Preferred Stock**”, and 85,806,214 shares of authorized Preferred Stock are hereby designated “**Series B Preferred Stock**” with the following rights, preferences, powers, privileges and restrictions, qualifications and limitations. The Series A Preferred Stock, the Series A-1 Preferred Stock and the Series A-2 Preferred Stock are referred to collectively herein as the “**Series A/A-1/A-2 Preferred Stock**”. Unless otherwise indicated, references to “sections” or “subsections” in this Part B of this Article Fourth refer to sections and subsections of Part B of this Article Fourth.

##### 1. Dividends.

1.1 The holders of Series B Preferred Stock, prior and in preference to the holders of each series of Series A/A-1/A-2 Preferred Stock and the holders of Common Stock, shall be entitled to receive, but only out of funds that are legally available therefor, cash dividends at the rate of eight percent (8%) of the Series B Original Issue Price (as defined below) per annum on each outstanding share of Series B Preferred Stock. Such dividends shall be payable only when, as and if declared by the Board of Directors of the Corporation (the “**Board**”) and shall be non-cumulative

1.2 The holders of each series of Series A/A-1/A-2 Preferred Stock, prior and in preference to the holders of Common Stock, shall be entitled to receive on a *pari passu* basis, but only out of funds that are legally available therefor, cash dividends at the rate of eight percent (8%) of the Series A Original Issue Price (as defined below), the Series A-1 Original Issue Price (as defined below), or the Series A-2 Original Issue Price (as defined below) as applicable, per annum on each outstanding share of Series A Preferred Stock, Series A-1 Preferred Stock, and Series A-2 Preferred Stock, respectively. Such dividends shall be payable only when, as and if declared by the Board and shall be non-cumulative.

1.3 The Corporation shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Corporation (other than dividends on shares of Common Stock payable in shares of Common Stock) unless (in addition to obtaining any consents required elsewhere in this Certificate of Incorporation) the holders of Preferred Stock then outstanding shall first receive, or simultaneously receive, in addition to the dividends payable pursuant to Subsection 1.1 and Subsection 1.2, a dividend on each outstanding share of Preferred Stock in an amount at least equal to (A) in the case of a dividend on Common Stock or any class or series that is convertible into Common Stock, that dividend per share of the applicable series of Preferred Stock as would equal the product of (1) the dividend payable on each share of such class or series determined, if applicable, as if all shares of such class or series had been converted into Common Stock and (2) the number of shares of Common Stock issuable upon conversion of a share of Preferred Stock, in each case calculated on the record date for determination of holders entitled to receive such dividend or (B) in the case of a dividend on any class or series that is not convertible into Common Stock, at a rate per share of the applicable series of Preferred Stock determined by (1) dividing the amount of the dividend payable on each share of such class or series of capital stock by the original issuance price of such class or series of capital stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to such class or series) and (2) multiplying such fraction by an amount equal to the Applicable Original Issue Price (as defined below); provided that if the Corporation declares, pays or sets aside, on the same date, a dividend on shares of more than one class or series of capital stock of the Corporation, the dividend payable to the holders of the applicable series of Preferred Stock pursuant to this Section 1 shall be calculated based upon the dividend on the class or series of capital stock that would result in the highest dividend. The “**Series A Original Issue Price**” shall mean \$1.00 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A Preferred Stock. The “**Series A-1 Original Issue Price**” shall mean \$1.00 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A-1 Preferred Stock. The “**Series A-2 Original Issue Price**” shall mean \$0.8266466 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A-2 Preferred Stock. The “**Series B Original Issue Price**” shall mean \$1.3985 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series B Preferred Stock. The “**Applicable Original Issue Price**” shall mean, as the context so requires, the Series A Original Issue Price with respect to the Series A Preferred Stock, the Series A-1 Original Issue Price with respect to the Series A-1 Preferred Stock, the Series A-2 Original Issue Price with respect to the Series A-2 Preferred Stock and the Series B Original Issue Price with respect to the Series B Preferred Stock.

## 2. Liquidation, Dissolution or Winding Up; Certain Mergers, Consolidations and Asset Sales.

2.1 Preferential Payments to Holders of Series B Preferred Stock. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation (a “**Liquidation Event**”) or Deemed Liquidation Event (as defined below), the holders of shares of Series B Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders before any payment shall be made to the holders shares of each series of Series A/A-1/A-2 Preferred Stock and Common Stock by reason of their ownership thereof, an amount per share equal to the greater of (i) one (1) times the Series B Original Issue Price, plus any dividends declared but unpaid thereon, or (ii) such amount per share as would have been payable had all shares of Series B Preferred Stock been converted into Common Stock pursuant to Section 4 immediately prior to such Liquidation Event or Deemed Liquidation Event (the amounts payable pursuant to this sentence is hereinafter referred to as the “**Series B Liquidation Amount**”). If upon any such Liquidation Event or Deemed Liquidation Event, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series B Preferred Stock the full amount to which they shall be entitled under this Subsection 2.1, the holders of shares of Series B Preferred Stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

2.2 Preferential Payments to Holders of Series A/A-1/A-2 Preferred Stock. In the event of any Liquidation Event or Deemed Liquidation Event (as defined below), after the payment in full of the Series B Liquidation Amounts for all shares of Series B Preferred Stock, the holders of shares of each series of Series A/A-1/A-2 Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to the greater of (i) (A) in the case of Series A Preferred Stock, one (1) times the Series A Original Issue Price, plus any dividends declared but unpaid thereon, (B) in the case of Series A-1 Preferred Stock, one (1) times the Series A-1 Original Issue Price, plus any dividends declared but unpaid thereon, and (C) in the case of Series A-2 Preferred Stock, one (1) times the Series A-2 Original Issue Price, plus any dividends declared but unpaid thereon or (ii) such amount per share as would have been payable had all shares of such series of Series A/A-1/A-2 Preferred Stock been converted into Common Stock pursuant to Section 4 immediately prior to such Liquidation Event or Deemed Liquidation Event (the amounts payable pursuant to this sentence is hereinafter referred to as the “**Series A/A-1/A-2 Liquidation Amounts**”). If upon any such Liquidation Event or Deemed Liquidation Event, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series A/A-1/A-2 Preferred Stock the full amount to which they shall be entitled under this Subsection 2.2, the holders of shares of Series A/A-1/A-2 Preferred Stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full. The “**Applicable Liquidation Amount**” shall mean, as the context so requires, the Series A/A-1/A-2 Liquidation Amount with respect to the Series A Preferred Stock, Series A-1 Preferred Stock, or Series A-2 Preferred Stock, as applicable, or the Series B Liquidation Amount with respect to the Series B Preferred Stock.

2.3 Payments to Holders of Common Stock. In the event of any Liquidation Event or Deemed Liquidation Event, after the payment of all preferential amounts required to be paid to the holders of shares of Series B Preferred Stock and to the holders of shares of Series A/A-1/A-2 Preferred Stock as set forth in Subsections 2.1 and 2.2 above, the remaining assets of the Corporation available for distribution to its stockholders shall be distributed among the holders of shares of Common Stock, pro rata based on the number of shares held by each such holder.

2.4 Deemed Liquidation Events.

2.4.1 Definition. Each of the following events shall be considered a “**Deemed Liquidation Event**” unless the Required Holders (as defined below) voting or consenting together as a single class on an as-converted basis, elect otherwise by written notice sent to the Corporation at least five (5) days prior to the effective date of any such event:

(a) a merger or consolidation in which

- (i) the Corporation is a constituent party or
- (ii) a subsidiary of the Corporation is a constituent party and the Corporation issues shares of its capital stock pursuant to such merger or consolidation,

except any such merger or consolidation involving the Corporation or a subsidiary in which the shares of capital stock of the Corporation outstanding immediately prior to such merger or consolidation continue to represent, or are converted into or exchanged for shares of capital stock that represent, immediately following such merger or consolidation (in substantially the same proportions and with substantially the same rights and privileges), a majority, by voting power, of the capital stock of (1) the surviving or resulting corporation; or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation; or

(b) the sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Corporation or any subsidiary of the Corporation of all or substantially all the assets of the Corporation and its subsidiaries taken as a whole, or the sale or disposition (whether by merger, consolidation or otherwise) of one or more subsidiaries of the Corporation if substantially all of the assets of the Corporation and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries, except where such sale, lease, transfer, exclusive license or other disposition is to a wholly owned subsidiary of the Corporation.

For all purposes of this Certificate of Incorporation, the term “**Required Holders**” shall mean the affirmative consent or vote of the holders of at least a majority of the outstanding shares of Preferred Stock, voting together as a single class and on an as-converted basis, which majority must include the affirmative consent or vote of the holders of at least seventy percent (70%) of the outstanding shares of Series B Preferred Stock, voting as a separate class and on an as-converted basis.

#### 2.4.2 Effecting a Deemed Liquidation Event.

(a) The Corporation shall not have the power to effect a Deemed Liquidation Event referred to in Subsection 2.4.1(a)(i) unless the agreement or plan of merger or consolidation for such transaction (the “**Merger Agreement**”) provides that the consideration payable to the stockholders of the Corporation shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1, 2.2 and 2.3.

(b) In the event of a Deemed Liquidation Event referred to in Subsection 2.4.1(a)(ii), or 2.4.1(b) above, if the Corporation does not effect a dissolution of the Corporation under the General Corporation Law within ninety (90) days after such Deemed Liquidation Event, then (i) the Corporation shall send a written notice to each holder of Preferred Stock no later than the ninetieth (90<sup>th</sup>) day after the Deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) pursuant to the terms of the following clause (ii) to require the redemption of such shares of Preferred Stock, and (ii) if the Required Holders so request in a written instrument delivered to the Corporation not later than one hundred twenty (120) days after such Deemed Liquidation Event, the Corporation shall use the consideration received by the Corporation for such Deemed Liquidation Event (net of any retained liabilities associated with the assets sold or technology licensed, as determined in good faith by the Board (the “**Net Proceeds**”)), all to the extent permitted by Delaware law governing distributions to stockholders, on the one hundred fiftieth (150<sup>th</sup>) day after such Deemed Liquidation Event (the “**Redemption Date**”), to redeem all outstanding shares of each series of Preferred Stock at a price per share equal to the Applicable Liquidation Amount (the “**Redemption Price**”). Notwithstanding the foregoing, in the event of a redemption pursuant to the preceding sentence, if the Net Proceeds are not sufficient to redeem all outstanding shares of Preferred Stock, or if the Corporation does not have sufficient lawfully available funds to effect such redemption, the Corporation shall first ratably redeem each holder’s shares of Series B Preferred Stock to the fullest extent of such available amounts based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the available amounts were sufficient to redeem all such shares, and second, ratably redeem each holder’s shares of Series A/A-1/A-2 Preferred Stock to the fullest extent of such remaining available amounts after the payment to holders of Series B Preferred Stock of all amounts owed thereto pursuant to this Subsection 2.4.2(b) based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the available amounts were sufficient to redeem all such shares. Prior to the distribution or redemption provided for in this Subsection 2.4.2(b), the Corporation shall not expend or dissipate the consideration received from such Deemed Liquidation Event, except to discharge expenses incurred in connection with such Deemed Liquidation Event or, to the extent approved by the Required Holders, to discharge expenses incurred in the ordinary course of business.

(c) The Corporation shall send written notice of a required redemption pursuant to Subsection 2.4.2(b) (the “**Redemption Notice**”) to each holder of record of Preferred Stock not less than forty (40) days prior to the Redemption Date. The Redemption Notice shall state:

- (i) the number of shares of each series of Preferred Stock held by the holder that the Corporation shall redeem on the Redemption Date;
- (ii) the Redemption Date and the Redemption Price;
- (iii) the date upon which the holder’s right to convert such shares terminates (as determined in accordance with Subsection 4.1.2); and
- (iv) for holders of shares in certificated form, that the holder is to surrender to the Corporation, in the manner and at the place designated, his, her or its certificate or certificates representing the shares of each series of Preferred Stock to be redeemed.

(d) On or before the Redemption Date, each holder of shares of Preferred Stock, unless such holder has exercised his, her or its right to convert such shares as provided in Section 4.1, shall, if a holder of shares in certificated form, surrender the certificate or certificates representing such shares (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation, in the manner and at the place designated in the Redemption Notice, and thereupon the Redemption Price for such shares shall be payable to the order of the person whose name appears on such certificate or certificates as the owner thereof.

(e) If the Redemption Notice shall have been duly given, and if on the applicable Redemption Date the Redemption Price payable upon redemption of the shares of Preferred Stock to be redeemed on the Redemption Date is paid or tendered for payment or deposited with an independent payment agent so as to be available therefor in a timely manner, then notwithstanding that any certificates evidencing any of the shares of Preferred Stock so called for redemption shall not have been surrendered, dividends with respect to such shares of Preferred Stock shall cease to accrue after the Redemption Date and all rights with respect to such shares shall forthwith after the Redemption Date terminate, except only the right of the holders to receive the Redemption Price without interest upon surrender of any such certificate or certificates therefor.

2.4.3 Amount Deemed Paid or Distributed. The amount deemed paid or distributed to the holders of capital stock of the Corporation upon any such merger, consolidation, sale, transfer, exclusive license, other disposition or redemption shall be the cash or the value of the property, rights or securities paid or distributed to such holders by the Corporation or the acquiring person, firm or other entity. The value of such property, rights or securities shall be determined in good faith by the Board.

2.4.4 Allocation of Escrow and Contingent Consideration. In the event of a Deemed Liquidation Event pursuant to Subsection 2.4.1(a)(i), if any portion of the consideration payable to the stockholders of the Corporation is payable only upon satisfaction of contingencies (the “**Additional Consideration**”), the Merger Agreement shall provide that (a) the portion of such consideration that is not Additional Consideration (such portion, the “**Initial Consideration**”) shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1, 2.2 and 2.3 as if the Initial Consideration were the only consideration payable in connection with such Deemed Liquidation Event; and (b) any Additional Consideration which becomes payable to the stockholders of the Corporation upon satisfaction of such contingencies shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1, 2.2 and 2.3 after taking into account the previous payment of the Initial Consideration as part of the same transaction. For the purposes of this Subsection 2.4.4, consideration placed into escrow or retained as a holdback to be available for satisfaction of indemnification or similar obligations in connection with such Deemed Liquidation Event shall be deemed to be Additional Consideration.

### 3. Voting.

3.1 General. On any matter presented to the stockholders of the Corporation for their action or consideration at any meeting of stockholders of the Corporation (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of the applicable series of Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class. The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by (in addition to any vote of the holders of one or more series of Preferred Stock that may be required by the terms of the Certificate of Incorporation) the affirmative vote of the holders of shares of capital stock of the Corporation representing a majority of the votes represented by all outstanding shares of capital stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.



3.2 **Election of Directors.** The holders of record of the shares of Series B Preferred Stock, exclusively and as a separate class, shall be entitled to elect two (2) directors of the Corporation (the “**Series B Preferred Directors**”), the holders of record of the shares of Series A/A-1/A-2 Preferred Stock, exclusively and as a separate class, shall be entitled to elect three (3) directors of the Corporation (the “**Series A Preferred Directors**”, together with the Series B Directors, the “**Preferred Directors**”) and the holders of record of the shares of Common Stock, exclusively and as a separate class, shall be entitled to elect one (1) director of the Corporation. Any director elected as provided in the preceding sentence may be removed only by the affirmative vote of the holders of the shares of the class or series of capital stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders. If the holders of shares of Preferred Stock or Common Stock, as the case may be, fail to elect a sufficient number of directors to fill all directorships for which they are entitled to elect directors, voting exclusively and as a separate class, pursuant to the first sentence of this Subsection 3.2, then any directorship not so filled shall remain vacant until such time as the holders of the Preferred Stock or Common Stock, as the case may be, elect a person to fill such directorship by vote or written consent in lieu of a meeting; and no such directorship may be filled by stockholders of the Corporation other than by the stockholders of the Corporation that are entitled to elect a person to fill such directorship, voting exclusively and as a separate class. The holders of record of the shares of Common Stock and of any other class or series of voting stock (including the Preferred Stock), exclusively and voting together as a single class, shall be entitled to elect the balance of the total number of directors of the Corporation. At any meeting held for the purpose of electing a director, the presence in person or by proxy of the holders of a majority of the outstanding shares of the class or series entitled to elect such director shall constitute a quorum for the purpose of electing such director. A vacancy in any directorship filled by the holders of any class or series shall be filled only by vote or written consent in lieu of a meeting of the holders of such class or series. The rights of the holders of the Preferred Stock and the rights of the holders of the Common Stock under the first sentence of this Subsection 3.2 shall terminate on the first date following the Series B Original Issue Date on which there are no shares of Preferred Stock issued or outstanding.

3.3 **Preferred Stock Protective Provisions.** At any time when at least 33,879,315 shares of Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Preferred Stock) are outstanding, the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, do any of the following, or permit or cause any subsidiary of the Corporation to do any of the following, without (in addition to any other vote required by law or the Certificate of Incorporation) the written consent or affirmative vote of the Required Holders, given in writing or by vote at a meeting, consenting or voting (as the case may be) as a single class, and any such act or transaction entered into without such consent or vote shall be null and void *ab initio*, and of no force or effect.

3.3.1 liquidate, dissolve or wind-up the business and affairs of the Corporation, effect any merger or consolidation or any other Deemed Liquidation Event, or consent to any of the foregoing;

3.3.2 amend, alter, repeal or waive any provision of the Certificate of Incorporation or Bylaws of the Corporation in a manner that adversely affects any of the designations, preferences, rights, privileges or powers of the Series A Preferred Stock, Series A-1 Preferred Stock, Series A-2 Preferred Stock or Series B Preferred Stock;

3.3.3 create, or authorize the creation of, or issue or obligate itself to issue shares of, any additional class or series of capital stock that ranks senior to or *pari passu* with the Preferred Stock with respect to the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends and rights of redemption or voting, or increase the authorized number of shares of Preferred Stock or increase the authorized number of shares of any additional class or series of capital stock that ranks senior to or *pari passu* with the Preferred Stock with respect to the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends and rights of redemption or voting;

3.3.4 (i) reclassify, alter or amend any existing security of the Corporation that is *pari passu* with the Preferred Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends or rights of redemption or voting, if such reclassification, alteration or amendment would render such other security senior to the Preferred Stock in respect of any such right, preference, or privilege or (ii) reclassify, alter or amend any existing security of the Corporation that is junior to the Preferred Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends or rights of redemption or voting, if such reclassification, alteration or amendment would render such other security senior to or *pari passu* with the Preferred Stock in respect of any such right, preference or privilege;

3.3.5 purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend or make any distribution on, any shares of capital stock of the Corporation other than (i) redemptions of or dividends or distributions on the Preferred Stock as expressly authorized herein, (ii) distributions upon a Liquidation Event or Deemed Liquidation Event in accordance with Subsections 2.1, 2.2 and 2.3 of the Certificate of Incorporation, (iii) dividends or other distributions payable on the Common Stock solely in the form of additional shares of Common Stock and for which an appropriate adjustment is made to the Applicable Conversion Price (as defined below) and (iv) repurchases of Common Stock approved by the Board (including all of the Preferred Directors) from former employees, officers, directors, consultants or other persons who performed services for the Corporation or any subsidiary in connection with the cessation of such employment or service at no greater than the original purchase price thereof;

3.3.6 create, or authorize the creation of, or issue, or authorize the issuance of, or guarantee or assume, or authorize the guarantee or assumption of, any debt security if the aggregate indebtedness of the Corporation and its subsidiaries for borrowed money following such action would exceed \$250,000, other than (i) equipment leases or bank lines of credit and (ii) any debt security that has received the prior approval of the Board, including the approval of a majority of the Preferred Directors;

3.3.7 hire, terminate or change the compensation of the executive officers of the Corporation or its subsidiaries, unless such hiring, termination or change was approved by the Board (including approval by a majority of the Preferred Directors);

3.3.8 sell, transfer, license, pledge or encumber all or substantially all of the Corporation's technology or intellectual property, other than licenses granted in the ordinary course of business;

3.3.9 enter into or be a party to any transaction with any officer or employee of the Corporation or any of its subsidiaries or any "associate" (as defined in Rule 12b-2 promulgated under the Securities Exchange Act of 1934, as amended) thereof, unless such transaction was approved by the Board (including approval by a majority of the Preferred Directors, other than any Preferred Director that is an interested party with respect to such transaction); such transaction was conducted on an arms-length basis and upon fair and reasonable terms that were approved by the Board; or a preferred equity financing in which the Corporation complies with Section 4 of the Fourth Amended and Restated Investors' Rights Agreement, by and among the Company, the investors listed therein and certain stockholders;

3.3.10 increase the number of shares of Common Stock available for issuance under the Corporation's 2016 Stock Incentive Plan, as amended (the "2016 Plan") or to adopt any new stock incentive or stock option plan;

3.3.11 create, or hold capital stock in, any subsidiary that is not wholly owned (either directly or through one or more other subsidiaries) by the Corporation, or sell, transfer or otherwise dispose of any capital stock of any direct or indirect subsidiary of the Corporation, or permit any direct or indirect subsidiary to sell, lease, transfer, exclusively license or otherwise dispose (in a single transaction or series of related transactions) of all or substantially all of the assets of such subsidiary; or

3.3.12 increase or decrease the authorized number of directors constituting the Board.

3.4 Series A Preferred Stock Protective Provision. At any time when at least a majority of the shares of Series A Preferred Stock issued and outstanding on or about the date that this Certificate of Incorporation is filed are issued and outstanding, the Corporation shall not, either directly or indirectly (including through any subsidiary of the Corporation) by amendment, merger, consolidation, reclassification, reorganization or otherwise, do any of the following without (in addition to any other vote required by law or this Certificate of Incorporation and without prejudice to any other rights available to the holders of Series A Preferred Stock) the written consent or affirmative vote of holders of at least seventy percent (70%) of Series A Preferred Stock, given in writing or by vote at a meeting, consenting or voting (as the case may be) as a single class, and any such act or transaction entered into without such consent or vote shall be null and void *ab initio*, and of no force or effect: (a) alter, amend or waive any provision of this Certificate of Incorporation of the Corporation, as amended from time to time, or Bylaws of the Corporation in a manner that disproportionately and adversely affects the rights, preferences, privileges or powers of the Series A Preferred Stock or (b) increase the number of authorized shares of Series A Preferred Stock, provided, that the creation or issuance of a new series of senior preferred stock and correlative amendments to this Certificate of Incorporation shall not in and of itself be considered disproportionately adverse to the rights, preferences or privileges of the Series A Preferred Stock.

3.5 Series A-1 Preferred Stock Protective Provision. At any time when at least a majority of the shares of Series A-1 Preferred Stock issued and outstanding on or about the date that this Certificate of Incorporation is filed are issued and outstanding, the Corporation shall not, either directly or indirectly (including through any subsidiary of the Corporation) by amendment, merger, consolidation, reclassification, reorganization or otherwise, do any of the following without (in addition to any other vote required by law or this Certificate of Incorporation and without prejudice to any other rights available to the holders of Series A-1 Preferred Stock) the written consent or affirmative vote of holders of at least sixty-five percent (65%) of Series A-1 Preferred Stock (which holders shall include Atlas Venture Fund X, L.P., and its affiliates) given in writing or by vote at a meeting, consenting or voting (as the case may be) as a single class, and any such act or transaction entered into without such consent or vote shall be null and void *ab initio*, and of no force or effect: (a) alter, amend or waive any provision of the Certificate of Incorporation of the Corporation, as amended from time to time, or Bylaws of the Corporation in a manner that disproportionately and adversely affects the rights, preferences, privileges or powers of the Series A-1 Preferred Stock or (b) increase the number of authorized shares of Series A-1 Preferred Stock, provided, that the creation or issuance of a new series of senior preferred stock and correlative amendments to this Certificate of Incorporation shall not in and of itself be considered disproportionately adverse to the rights, preferences or privileges of the Series A-1 Preferred Stock.

3.6 Series A-2 Preferred Stock Protective Provision. At any time when at least a majority of the shares of Series A-2 Preferred Stock issued and outstanding on or about the date that this Certificate of Incorporation is filed are issued and outstanding, the Corporation shall not, either directly or indirectly (including through any subsidiary of the Corporation) by amendment, merger, consolidation, reclassification, reorganization or otherwise, do any of the following without (in addition to any other vote required by law or this Certificate of Incorporation and without prejudice to any other rights available to the holders of Series A-2 Preferred Stock) the written consent or affirmative vote of holders of at least sixty-five percent (65%) of Series A-2 Preferred Stock (which holders shall include Atlas Venture Fund XI, L.P., and its affiliates) given in writing or by vote at a meeting, consenting or voting (as the case may be) as a single class, and any such act or transaction entered into without such consent or vote shall be null and void *ab initio*, and of no force or effect: (a) alter, amend or waive any provision of the Certificate of Incorporation of the Corporation, as amended from time to time, or Bylaws of the Corporation in a manner that disproportionately and adversely affects the rights, preferences, privileges or powers of the Series A-2 Preferred Stock or (b) increase the number of authorized shares of Series A-2 Preferred Stock, provided, that the creation or issuance of a new series of senior preferred stock and correlative amendments to this Certificate of Incorporation shall not in and of itself be considered disproportionately adverse to the rights, preferences or privileges of the Series A-2 Preferred Stock.

3.7 Series B Preferred Stock Protective Provision. At any time when at least a majority of the shares of Series B Preferred Stock issued on or about the date that this Certificate of Incorporation is filed are issued and outstanding, the Corporation shall not, either directly or indirectly (including through any subsidiary of the Corporation) by amendment, merger, consolidation, reclassification, reorganization or otherwise, do any of the following without (in addition to any other vote required by law or this Certificate of Incorporation and without prejudice to any other rights available to the holders of Series B Preferred Stock) the written consent or affirmative vote of holders of at least seventy percent (70%) of Series B Preferred Stock given in writing or by vote at a meeting, consenting or voting (as the case may be) as a separate class (the “**Series B Required Holders**”), and any such act or transaction entered into without such consent or vote shall be null and void *ab initio*, and of no force or effect: (a) alter, amend or waive any provision of the Certificate of Incorporation of the Corporation, as amended from time to time, or Bylaws of the Corporation in a manner that disproportionately and adversely affects the rights, preferences, privileges or powers of the Series B Preferred Stock or (b) increase the number of authorized shares of Series B Preferred Stock, provided, that the creation or issuance of a new series of senior preferred stock and correlative amendments to this Certificate of Incorporation shall not in and of itself be considered disproportionately adverse to the rights, preferences or privileges of the Series B Preferred Stock.

#### 4. Optional Conversion.

The holders of the Preferred Stock shall have conversion rights as follows (the “**Conversion Rights**”):

##### 4.1 Right to Convert.

4.1.1 Conversion Ratio. Each share of Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and non-assessable shares of Common Stock as is determined by dividing the applicable Original Issue Price with respect to such share of Preferred Stock by the Applicable Conversion Price applicable to such share, in each case as in effect at the time of conversion; provided that such holder may waive such option to convert pursuant to this Subsection 4.1.1 upon written notice to the Company. The “**Applicable Conversion Price**” shall initially be equal to (w) with respect to each share of the Series A Preferred Stock, the Series A Original Issue Price, (x) with respect to each share of the Series A-1 Preferred Stock, the Series A-1 Original Issue Price, (y) with respect to each share of the Series A-2 Preferred Stock, the Series A-2 Original Issue Price and (z) with respect to each share of the Series B Preferred Stock, the Series B Original Issue Price. Such initial Applicable Conversion Price, and the rate at which shares of each series of Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below.

4.1.2 Termination of Conversion Rights. In the event of a Liquidation Event or a Deemed Liquidation Event, the Conversion Rights shall terminate at the close of business on the last full day preceding the date fixed for the payment of any such amounts distributable on such event to the holders of Preferred Stock.

4.2 Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of the Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of a share of Common Stock as determined in good faith by the Board. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of Preferred Stock the holder is at the time converting into Common Stock and the aggregate number of shares of Common Stock issuable upon such conversion.

##### 4.3 Mechanics of Conversion.

4.3.1 Notice of Conversion. In order for a holder of Preferred Stock to voluntarily convert shares of Preferred Stock into shares of Common Stock, such holder shall (a) provide written notice to the Corporation’s transfer agent at the office of the transfer agent for the Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent) that such holder elects to convert all or any number of such holder’s shares of Preferred Stock and, if applicable, any event on which such conversion is contingent and (b) surrender the certificate or certificates for such shares of Preferred Stock (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) at the office of the transfer agent for the Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent). Such notice shall state such holder’s name or the names of the nominees in which such holder wishes the shares of Common Stock to be issued. If required by the Corporation, any certificates surrendered for conversion shall be endorsed or accompanied by a written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or his, her or its attorney duly authorized in writing. The close of business on the date of receipt by the transfer agent (or by the Corporation if the Corporation serves as its own transfer agent) of such notice and, if applicable, certificates (or lost certificate affidavit and agreement) shall be the time of conversion (the “**Conversion Time**”), and the shares of Common Stock issuable upon conversion of the specified shares shall be deemed to be outstanding of record as of such date. The Corporation shall, as soon as practicable after the Conversion Time, (i) issue and deliver to such holder of Preferred Stock, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable upon such conversion in accordance with the provisions hereof and a certificate for the number (if any) of the shares of Preferred Stock represented by the surrendered certificate that were not converted into Common Stock, (ii) pay in cash such amount as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and (iii) pay all declared but unpaid dividends on the shares of Preferred Stock so converted.

4.3.2 Reservation of Shares. The Corporation shall, at all times when the Preferred Stock shall be outstanding, reserve and keep available out of its authorized but unissued capital stock, for the purpose of effecting the conversion of the Preferred Stock, such number of its duly authorized shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Preferred Stock, the Corporation shall take such corporate action as may be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes, including, without limitation, engaging in best efforts to obtain the requisite stockholder approval of any necessary amendment to this Certificate of Incorporation. Before taking any action which would cause an adjustment reducing an Applicable Conversion Price below the then par value of the shares of Common Stock issuable upon conversion of the Preferred Stock, the Corporation will take any corporate action which may, in the opinion of its counsel, be necessary in order that the Corporation may validly and legally issue fully paid and non-assessable shares of Common Stock at such adjusted Applicable Conversion Price.

4.3.3 Effect of Conversion. All shares of Preferred Stock which shall have been surrendered for conversion as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares shall immediately cease and terminate at the Conversion Time, except only the right of the holders thereof to receive shares of Common Stock in exchange therefor, to receive payment in lieu of any fraction of a share otherwise issuable upon such conversion as provided in Subsection 4.2 and to receive payment of any dividends declared but unpaid thereon. Any shares of Preferred Stock so converted shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock accordingly.

4.3.4 No Further Adjustment. Upon any such conversion, no adjustment to such Applicable Conversion Price shall be made for any declared but unpaid dividends on the Preferred Stock surrendered for conversion or on the Common Stock delivered upon conversion.

4.3.5 Taxes. The Corporation shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Preferred Stock pursuant to this Section 4. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the Corporation the amount of any such tax or has established, to the satisfaction of the Corporation, that such tax has been paid.

4.4 Adjustments to Applicable Conversion Price for Diluting Issues.

4.4.1 Special Definitions. For purposes of this Certificate of Incorporation, the following definitions shall apply:

(a) “**Option**” shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(b) “**Series B Original Issue Date**” shall mean the date on which the first share of Series B Preferred Stock was issued.

(c) “**Convertible Securities**” shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

(d) “**Additional Shares of Common Stock**” shall mean all shares of Common Stock issued (or, pursuant to Subsection 4.4.3 below, deemed to be issued) by the Corporation after the Series B Original Issue Date, other than (1) the following shares of Common Stock and (2) shares of Common Stock deemed issued pursuant to the following Options and Convertible Securities (clauses (1) and (2), collectively, “**Exempted Securities**”):

- (i) shares of Common Stock, Options or Convertible Securities issued as a dividend or distribution on Preferred Stock;
- (ii) shares of Common Stock, Options or Convertible Securities issued by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by Subsection 4.5, 4.6, 4.7 or 4.8;
- (iii) shares of Common Stock or Options issued to employees or directors of, or consultants or advisors to, the Corporation or any of its subsidiaries pursuant to the 2016 Plan, any other stock incentive or stock option plan approved by the Required Holders in accordance with Subsection 3.3.9 or a plan, agreement or arrangement approved by the Board, including the approval of a majority of the Preferred Directors;

- (iv) shares of Common Stock or Convertible Securities actually issued upon the exercise of Options or shares of Common Stock actually issued upon the conversion or exchange of Convertible Securities, in each case provided such issuance is pursuant to the terms of such Option or Convertible Security;
- (v) shares of Common Stock, Options or Convertible Securities issued to banks, equipment lessors or other financial institutions, or to real property lessors, pursuant to a debt financing, equipment leasing or real property leasing transaction approved by the Board, including the approval of a majority of the Preferred Directors;
- (vi) shares of Common Stock, Options or Convertible Securities issued pursuant to the acquisition of another corporation by the Corporation by merger, purchase of substantially all of the assets or other reorganization or pursuant to a joint venture agreement, provided that such issuances are approved by the Board, including the approval of a majority of the Preferred Directors; or
- (vii) shares of Common Stock, Options or Convertible Securities issued in connection with sponsored research, collaboration, technology license, development, OEM, marketing or other similar agreements or strategic partnerships approved by the Board, including the approval of a majority of the Preferred Directors.

4.4.2 No Adjustment of Applicable Conversion Price. No adjustment in any Applicable Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the Required Holders agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock.



#### 4.4.3 Deemed Issue of Additional Shares of Common Stock.

(a) If the Corporation at any time or from time to time after the Series B Original Issue Date shall issue any Options or Convertible Securities (excluding Options or Convertible Securities which are themselves Exempted Securities) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto, assuming the satisfaction of any conditions to exercisability, convertibility or exchangeability but without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date.

(b) If the terms of any Option or Convertible Security, the issuance of which resulted in an adjustment to any Applicable Conversion Price pursuant to the terms of Subsection 4.4.4, are revised as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Corporation upon such exercise, conversion and/or exchange, then, effective upon such increase or decrease becoming effective, the Applicable Conversion Price computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted to such Applicable Conversion Price as would have obtained had such revised terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no readjustment pursuant to this clause (b) shall have the effect of increasing any Applicable Conversion Price to an amount which exceeds the lower of (i) such Applicable Conversion Price in effect immediately prior to the original adjustment made as a result of the issuance of such Option or Convertible Security, or (ii) such Applicable Conversion Price that would have resulted from any issuances of Additional Shares of Common Stock (other than deemed issuances of Additional Shares of Common Stock as a result of the issuance of such Option or Convertible Security) between the original adjustment date and such readjustment date.

(c) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities which are themselves Exempted Securities), the issuance of which did not result in an adjustment to any Applicable Conversion Price pursuant to the terms of Subsection 4.4.4 (either because the consideration per share (determined pursuant to Subsection 4.4.5) of the Additional Shares of Common Stock subject thereto was equal to or greater than any Applicable Conversion Price then in effect, or because such Option or Convertible Security was issued before the Series B Original Issue Date), are revised after the Series B Original Issue Date as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any decrease in the consideration payable to the Corporation upon such exercise, conversion or exchange, then such Option or Convertible Security, as so amended or adjusted, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in Subsection 4.4.3(a)) shall be deemed to have been issued effective upon such increase or decrease becoming effective.

(d) Upon the expiration or termination of any unexercised Option or unconverted or unexchanged Convertible Security (or portion thereof) which resulted (either upon its original issuance or upon a revision of its terms) in an adjustment to any Applicable Conversion Price pursuant to the terms of Subsection 4.4.4, such Applicable Conversion Price shall be readjusted to such Applicable Conversion Price as would have obtained had such Option or Convertible Security (or portion thereof) never been issued.

(e) If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, is calculable at the time such Option or Convertible Security is issued or amended but is subject to adjustment based upon subsequent events, any adjustment to any Applicable Conversion Price provided for in this Subsection 4.4.3 shall be effected at the time of such issuance or amendment based on such number of shares or amount of consideration without regard to any provisions for subsequent adjustments (and any subsequent adjustments shall be treated as provided in clauses (b) and (c) of this Subsection 4.4.3). If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, cannot be calculated at all at the time such Option or Convertible Security is issued or amended, any adjustment to any Applicable Conversion Price that would result under the terms of this Subsection 4.4.3 at the time of such issuance or amendment shall instead be effected at the time such number of shares and/or amount of consideration is first calculable (even if subject to subsequent adjustments), assuming for purposes of calculating such adjustment to such Applicable Conversion Price that such issuance or amendment took place at the time such calculation can first be made.

4.4.4 Adjustment of Applicable Conversion Price Upon Issuance of Additional Shares of Common Stock. In the event the Corporation shall at any time or from time to time after the Series B Original Issue Date issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Subsection 4.4.3), without consideration or for a consideration per share less than such Applicable Conversion Price in effect immediately prior to such issue, then such Applicable Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest one-hundredth of a cent) determined in accordance with the following formula:

$$CP_2 = (CP_1 \times (A + B)) \div (A + C).$$

For purposes of the foregoing formula, the following definitions shall apply:

(a) "CP<sub>2</sub>" shall mean the Applicable Conversion Price in effect immediately after such issue of Additional Shares of Common Stock

(b) "CP<sub>1</sub>" shall mean the Applicable Conversion Price in effect immediately prior to such issue of Additional Shares of Common Stock;

(c) "A" shall mean the number of shares of Common Stock outstanding immediately prior to such issue of Additional Shares of Common Stock (treating for this purpose as outstanding all shares of Common Stock issuable upon exercise of Options outstanding immediately prior to such issue or upon conversion or exchange of Convertible Securities (including the Preferred Stock) outstanding (assuming exercise of any outstanding Options therefor) immediately prior to such issue);

(d) "B" shall mean the number of shares of Common Stock that would have been issued if such Additional Shares of Common Stock had been issued at a price per share equal to CP<sub>1</sub> (determined by dividing the aggregate consideration received by the Corporation in respect of such issue by CP<sub>1</sub>); and

(e) "C" shall mean the number of such Additional Shares of Common Stock issued in such transaction.

4.4.5 Determination of Consideration. For purposes of Subsection 4.4, the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows:

(a) Cash and Property: Such consideration shall:

- (i) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation, excluding amounts paid or payable for accrued interest;
- (ii) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the Board; and
- (iii) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (i) and (ii) above, as determined in good faith by the Board.

(b) Options and Convertible Securities. The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to Subsection 4.4.3, relating to Options and Convertible Securities, shall be determined by dividing:

- (i) The total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by
- (ii) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities.

4.4.6 Multiple Closing Dates. In the event the Corporation shall issue on more than one date Additional Shares of Common Stock that are a part of one transaction or a series of related transactions and that would result in an adjustment to any Applicable Conversion Price pursuant to the terms of Subsection 4.4.4, and such issuance dates occur within a period of no more than ninety (90) days from the first such issuance to the final such issuance, then, upon the final such issuance, such Applicable Conversion Price shall be readjusted to give effect to all such issuances as if they occurred on the date of the first such issuance (and without giving effect to any additional adjustments as a result of any such subsequent issuances within such period).

4.5 Adjustment for Stock Splits and Combinations. If the Corporation shall at any time or from time to time after the Series B Original Issue Date effect a subdivision of the outstanding Common Stock, each Applicable Conversion Price in effect immediately before that subdivision shall be proportionately decreased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be increased in proportion to such increase in the aggregate number of shares of Common Stock outstanding. If the Corporation shall at any time or from time to time after the Series B Original Issue Date combine the outstanding shares of Common Stock, each Applicable Conversion Price in effect immediately before the combination shall be proportionately increased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be decreased in proportion to such decrease in the aggregate number of shares of Common Stock outstanding. Any adjustment under this subsection shall become effective at the close of business on the date the subdivision or combination becomes effective.

4.6 Adjustment for Certain Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series B Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable on the Common Stock in additional shares of Common Stock, then and in each such event each Applicable Conversion Price in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying each Applicable Conversion Price then in effect by a fraction:

(1) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and

(2) the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution.

Notwithstanding the foregoing (a) if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, such Applicable Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter such Applicable Conversion Price shall be adjusted pursuant to this subsection as of the time of actual payment of such dividends or distributions; and (b) no such adjustment shall be made if the holders of Preferred Stock simultaneously receive a dividend or other distribution of shares of Common Stock in a number equal to the number of shares of Common Stock as they would have received if all outstanding shares of Preferred Stock had been converted into Common Stock on the date of such event.

4.7 Adjustments for Other Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series B Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation (other than a distribution of shares of Common Stock in respect of outstanding shares of Common Stock) or in other property and the provisions of Section 1 do not apply to such dividend or distribution, then and in each such event the holders of Preferred Stock shall receive, simultaneously with the distribution to the holders of Common Stock, a dividend or other distribution of such securities or other property in an amount equal to the amount of such securities or other property as they would have received if all outstanding shares of Preferred Stock had been converted into Common Stock on the date of such event.

4.8 Adjustment for Merger or Reorganization, etc. Subject to the provisions of Subsection 2.4, if there shall occur any reorganization, recapitalization, reclassification, consolidation or merger involving the Corporation in which the Common Stock (but not the Preferred Stock) is converted into or exchanged for securities, cash or other property (other than a transaction covered by Subsections 4.4, 4.6 or 4.7), then, following any such reorganization, recapitalization, reclassification, consolidation or merger, each share of Preferred Stock shall thereafter be convertible in lieu of the Common Stock into which it was convertible prior to such event into the kind and amount of securities, cash or other property which a holder of the number of shares of Common Stock of the Corporation issuable upon conversion of one share of the applicable series of Preferred Stock immediately prior to such reorganization, recapitalization, reclassification, consolidation or merger would have been entitled to receive pursuant to such transaction; and, in such case, appropriate adjustment (as determined in good faith by the Board) shall be made in the application of the provisions in this Section 4 with respect to the rights and interests thereafter of the holders of the Preferred Stock, to the end that the provisions set forth in this Section 4 (including provisions with respect to changes in and other adjustments of any Applicable Conversion Price) shall thereafter be applicable, as nearly as reasonably may be, in relation to any securities or other property thereafter deliverable upon the conversion of the Preferred Stock.

4.9 Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of any Applicable Conversion Price pursuant to this Section 4, the Corporation at its expense shall, as promptly as reasonably practicable but in any event not later than ten (10) days thereafter, compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of the applicable series of Preferred Stock a certificate setting forth such adjustment or readjustment (including the kind and amount of securities, cash or other property into which the Preferred Stock is convertible) and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, as promptly as reasonably practicable after the written request at any time of any holder of such series of Preferred Stock (but in any event not later than ten (10) days thereafter), furnish or cause to be furnished to such holder a certificate setting forth (i) the Applicable Conversion Price then in effect, and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property which then would be received upon the conversion of the applicable series of Preferred Stock.

4.10 Notice of Record Date. In the event:

(a) the Corporation shall take a record of the holders of its Common Stock (or other capital stock or securities at the time issuable upon conversion of the Preferred Stock) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of capital stock of any class or any other securities, or to receive any other security; or

(b) of any capital reorganization of the Corporation, any reclassification of the Common Stock of the Corporation, or any Liquidation Event or Deemed Liquidation Event,

then, and in each such case, the Corporation will send or cause to be sent to the holders of the Preferred Stock a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is proposed to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other capital stock or securities at the time issuable upon the conversion of the Preferred Stock) shall be entitled to exchange their shares of Common Stock (or such other capital stock or securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up, and the amount per share and character of such exchange applicable to the Preferred Stock and the Common Stock. Such notice shall be sent at least ten (10) days prior to the record date or effective date for the event specified in such notice.

## 5. Mandatory Conversion.

5.1 Trigger Events. Upon either (a) the closing of the sale of shares of Common Stock to the public at a price of at least 2.0978 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Common Stock), in a firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, resulting in at least \$75,000,000 of gross proceeds to the Corporation, with the Company shares being listed on the New York Stock Exchange or NASDAQ (a “Qualified IPO”) or (b) the date and time, or the occurrence of an event, specified by vote or written consent of the Required Holders for the conversion of all outstanding shares of Preferred Stock (the date and time specified or the time of the event specified in such vote or written consent is referred to herein as the “**Mandatory Conversion Time**”), then (i) all outstanding shares of Preferred Stock shall automatically be converted into shares of Common Stock, at the then effective conversion rate as calculated pursuant to Subsection 4.1.1. and (ii) such shares may not be reissued by the Corporation.

5.2 Procedural Requirements. All holders of record of shares of Preferred Stock shall be sent written notice of the Mandatory Conversion Time and the place designated for mandatory conversion of all such shares of Preferred Stock pursuant to this Section 5. Such notice need not be sent in advance of the occurrence of the Mandatory Conversion Time. Upon receipt of such notice, each holder of shares of Preferred Stock shall surrender his, her or its certificate or certificates for all such shares (or, if such holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation at the place designated in such notice. If so required by the Corporation, any certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by his, her or its attorney duly authorized in writing. All rights with respect to the Preferred Stock converted pursuant to Subsection 5.1, including the rights, if any, to receive notices and vote (other than as a holder of Common Stock), will terminate at the Mandatory Conversion Time (notwithstanding the failure of the holder or holders thereof to surrender any certificates at or prior to such time), except only the rights of the holders thereof, upon surrender of any certificate or certificates of such holders (or lost certificate affidavit and agreement) therefor, to receive the items provided for in the next sentence of this Subsection 5.2. As soon as practicable after the Mandatory Conversion Time and, if applicable, the surrender of any certificate or certificates (or lost certificate affidavit and agreement) for Preferred Stock, the Corporation shall (a) issue and deliver to such holder, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable on such conversion in accordance with the provisions hereof and (b) pay cash as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and the payment of any declared but unpaid dividends on the shares of Preferred Stock converted. Such converted Preferred Stock shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock accordingly.

6. **Redeemed or Otherwise Acquired Shares.** Any shares of Preferred Stock that are redeemed or otherwise acquired by the Corporation or any of its subsidiaries shall be automatically and immediately cancelled and retired and shall not be reissued, sold or transferred. Neither the Corporation nor any of its subsidiaries may exercise any voting or other rights granted to the holders of Preferred Stock following any redemption or acquisition of Preferred Stock by the Corporation or any of its subsidiaries.

7. **Waiver.** Any of the rights, powers, preferences and other terms of the Preferred Stock set forth herein may be waived on behalf of all holders of Preferred Stock by the affirmative written consent or vote of the Required Holders; provided, however, that the waiver of any approval or consent rights specifically granted hereunder to the holders of Series B Preferred Stock shall additionally require the affirmative written consent or vote of the Series B Required Holders.

8. **Notices.** Any notice required or permitted by the provisions of this Article Fourth to be given to a holder of shares of Preferred Stock shall be mailed, postage prepaid, to the post office address last shown on the records of the Corporation, or given by electronic communication in compliance with the provisions of the General Corporation Law, and shall be deemed sent upon such mailing or electronic transmission.

**FIFTH:** Subject to any additional vote required by the Certificate of Incorporation or Bylaws, in furtherance and not in limitation of the powers conferred by statute, the Board is expressly authorized to make, repeal, alter, amend and rescind any or all of the Bylaws of the Corporation.

**SIXTH:** Elections of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

**SEVENTH:** Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws of the Corporation may provide. The books of the Corporation may be kept outside the State of Delaware at such place or places as may be designated from time to time by the Board or in the Bylaws of the Corporation.

**EIGHTH:** To the fullest extent permitted by law, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the General Corporation Law or any other law of the State of Delaware is amended after approval by the stockholders of this Article Eighth to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law as so amended.



Any repeal or modification of the foregoing provisions of this Article Eighth by the stockholders of the Corporation shall not adversely affect any right or protection of a director of the Corporation existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

**NINTH:** To the fullest extent permitted by applicable law, the Corporation is authorized to provide indemnification of (and advancement of expenses to) directors, officers and agents of the Corporation (and any other persons to which General Corporation Law permits the Corporation to provide indemnification) through Bylaw provisions, agreements with such agents or other persons, vote of stockholders or disinterested directors or otherwise, in excess of the indemnification and advancement otherwise permitted by Section 145 of the General Corporation Law.

Any amendment, repeal or modification of the foregoing provisions of this Article Ninth shall not adversely affect any right or protection of any director, officer or other agent of the Corporation existing at the time of such amendment, repeal or modification.

**TENTH:** The Corporation renounces, to the fullest extent permitted by law, any interest or expectancy of the Corporation in, or in being offered an opportunity to participate in, any Excluded Opportunity. An “**Excluded Opportunity**” is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of (i) any director of the Corporation who is not an employee of the Corporation or any of its subsidiaries, or (ii) any holder of Preferred Stock or any partner, member, director, stockholder, employee or agent of any such holder, other than someone who is an employee of the Corporation or any of its subsidiaries (collectively, “**Covered Persons**”), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person’s capacity as a director of the Corporation.

3. The foregoing amendment and restatement was approved by the holders of the requisite number of shares of this corporation in accordance with Section 228 of the General Corporation Law.

4. This Fourth Amended and Restated Certificate of Incorporation, which restates and integrates and amends the provisions of this corporation’s Certificate of Incorporation, has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law.

\* \* \*

**IN WITNESS WHEREOF**, this Fourth Amended and Restated Certificate of Incorporation has been executed on this 18th day of December, 2020.

By: /s/ Mark Manfredi

Mark Manfredi, Chief Executive Officer

**BYLAWS**  
**OF**  
**KYN THERAPEUTICS INC.**  
(a Delaware corporation)

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## ARTICLE I

### STOCKHOLDERS

1.1 Place of Meetings. All meetings of stockholders shall be held at such place as may be designated from time to time by the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President or, if not so designated, at the principal office of the corporation. The Board of Directors may, in its sole discretion, determine that a meeting shall not be held at any place, but may instead be held solely by means of remote communication in a manner consistent with the General Corporation Law of the State of Delaware.

1.2 Annual Meeting. The annual meeting of stockholders for the election of directors and for the transaction of such other business as may properly be brought before the meeting shall be held on a date and at a time designated by the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President (which date shall not be a legal holiday in the place where the meeting is to be held).

1.3 Special Meetings. Special meetings of stockholders for any purpose or purposes may be called at any time by only the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President, and may not be called by any other person or persons. The Board of Directors may postpone or reschedule any previously scheduled special meeting of stockholders. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting.

1.4 Notice of Meetings. Except as otherwise provided by law, notice of each meeting of stockholders, whether annual or special, shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting. Without limiting the manner by which notice otherwise may be given to stockholders, any notice shall be effective if given by a form of electronic transmission consented to (in a manner consistent with the General Corporation Law of the State of Delaware) by the stockholder to whom the notice is given. The notices of all meetings shall state the place, if any, date and time of the meeting and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting. The notice of a special meeting shall state, in addition, the purpose or purposes for which the meeting is called. If notice is given by mail, such notice shall be deemed given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation. If notice is given by electronic transmission, such notice shall be deemed given at the time specified in Section 232 of the General Corporation Law of the State of Delaware.

1.5 Voting List. The Secretary shall prepare, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, for a period of at least 10 days prior to the meeting: (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during ordinary business hours, at the principal place of business of the corporation. If the meeting is to be held at a physical location (and not solely by means of remote communication), then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. The list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

1.6 Quorum. Except as otherwise provided by law, the Certificate of Incorporation or these Bylaws, the holders of a majority in voting power of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at the meeting, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion, or represented by proxy, shall constitute a quorum for the transaction of business; provided, however, that where a separate vote by a class or classes or series of capital stock is required by law or the Certificate of Incorporation, the holders of a majority in voting power of the shares of such class or classes or series of the capital stock of the corporation issued and outstanding and entitled to vote on such matter, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion, or represented by proxy, shall constitute a quorum entitled to take action with respect to the vote on such matter. A quorum, once established at a meeting, shall not be broken by the withdrawal of enough votes to leave less than a quorum.

1.7 Adjournments. Any meeting of stockholders may be adjourned from time to time to any other time and to any other place at which a meeting of stockholders may be held under these Bylaws by the chairman of the meeting or by the stockholders present or represented at the meeting and entitled to vote, although less than a quorum. It shall not be necessary to notify any stockholder of any adjournment of less than 30 days if the time and place, if any, of the adjourned meeting, and the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such adjourned meeting, are announced at the meeting at which adjournment is taken, unless after the adjournment a new record date is fixed for the adjourned meeting. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting.

1.8 Voting and Proxies. Each stockholder shall have one vote for each share of stock entitled to vote held of record by such stockholder and a proportionate vote for each fractional share so held, unless otherwise provided by law or the Certificate of Incorporation. Each stockholder of record entitled to vote at a meeting of stockholders, or to express consent or dissent to corporate action without a meeting, may vote or express such consent or dissent in person (including by means of remote communications, if any, by which stockholders may be deemed to be present in person and vote at such meeting) or may authorize another person or persons to vote or act for such stockholder by a proxy executed or transmitted in a manner permitted by the General Corporation Law of the State of Delaware by the stockholder or such stockholder's authorized agent and delivered (including by electronic transmission) to the Secretary of the corporation. No such proxy shall be voted or acted upon after three years from the date of its execution, unless the proxy expressly provides for a longer period.

1.9 Action at Meeting. When a quorum is present at any meeting, any matter other than the election of directors to be voted upon by the stockholders at such meeting shall be decided by the vote of the holders of shares of stock having a majority in voting power of the votes cast by the holders of all of the shares of stock present or represented at the meeting and voting affirmatively or negatively on such matter (or if there are two or more classes or series of stock entitled to vote as separate classes, then in the case of each such class or series, the holders of a majority in voting power of the shares of stock of that class or series present or represented at the meeting and voting affirmatively or negatively on such matter), except when a different vote is required by law, the Certificate of Incorporation or these Bylaws. When a quorum is present at any meeting, any election by stockholders of directors shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election.

1.10 Conduct of Meetings.

(a) Chairman of Meeting. Meetings of stockholders shall be presided over by the Chairman of the Board, if any, or in the Chairman's absence by the Vice Chairman of the Board, if any, or in the Vice Chairman's absence by the Chief Executive Officer, or in the Chief Executive Officer's absence, by the President, or in the President's absence by a Vice President, or in the absence of all of the foregoing persons by a chairman designated by the Board of Directors, or in the absence of such designation by a chairman chosen by vote of the stockholders at the meeting. The Secretary shall act as secretary of the meeting, but in the Secretary's absence the chairman of the meeting may appoint any person to act as secretary of the meeting.

(b) Rules, Regulations and Procedures. The Board of Directors may adopt by resolution such rules, regulations and procedures for the conduct of any meeting of stockholders of the corporation as it shall deem appropriate including, without limitation, such guidelines and procedures as it may deem appropriate regarding the participation by means of remote communication of stockholders and proxyholders not physically present at a meeting. Except to the extent inconsistent with such rules, regulations and procedures as adopted by the Board of Directors, the chairman of any meeting of stockholders shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board of Directors or prescribed by the chairman of the meeting, may include, without limitation, the following: (i) the establishment of an agenda or order of business for the meeting; (ii) rules and procedures for maintaining order at the meeting and the safety of those present; (iii) limitations on attendance at or participation in the meeting to stockholders of record of the corporation, their duly authorized and constituted proxies or such other persons as shall be determined; (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (v) limitations on the time allotted to questions or comments by participants. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.



### 1.11 Action without Meeting.

(a) Taking of Action by Consent. Any action required or permitted to be taken at any annual or special meeting of stockholders of the corporation may be taken without a meeting, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote on such action were present and voted. Except as otherwise provided by the Certificate of Incorporation, stockholders may act by written consent to elect directors; provided, however, that, if such consent is less than unanimous, such action by written consent may be in lieu of holding an annual meeting only if all of the directorships to which directors could be elected at an annual meeting held at the effective time of such action are vacant and are filled by such action.

(b) Electronic Transmission of Consents. A telegram, cablegram or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, or by a person or persons authorized to act for a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this section, provided that any such telegram, cablegram or other electronic transmission sets forth or is delivered with information from which the corporation can determine (i) that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder or proxyholder and (ii) the date on which such stockholder or proxyholder or authorized person or persons transmitted such telegram, cablegram or electronic transmission. The date on which such telegram, cablegram or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by telegram, cablegram or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form shall be delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation's registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by telegram, cablegram or other electronic transmission may be otherwise delivered to the principal place of business of the corporation or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the Board of Directors. Any copy, facsimile or other reliable reproduction of a consent in writing may be substituted or used in lieu of the original writing for any and all purposes for which the original writing could be used, provided that such copy, facsimile or other reproduction shall be a complete reproduction of the entire original writing.

(c) Notice of Taking of Corporate Action. Prompt notice of the taking of corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for such meeting had been the date that written consents signed by a sufficient number of holders to take the action were delivered to the corporation.

## ARTICLE II

### DIRECTORS

2.1 General Powers. The business and affairs of the corporation shall be managed by or under the direction of a Board of Directors, who may exercise all of the powers of the corporation except as otherwise provided by law or the Certificate of Incorporation.

2.2 Number, Election and Qualification. Subject to the rights of holders of any series of Preferred Stock to elect directors, the number of directors of the corporation shall be established from time to time by the stockholders or the Board of Directors. The directors shall be elected at the annual meeting of stockholders by such stockholders as have the right to vote on such election. Election of directors need not be by written ballot. Directors need not be stockholders of the corporation.

2.3 Chairman of the Board; Vice Chairman of the Board. The Board of Directors may appoint from its members a Chairman of the Board and a Vice Chairman of the Board, neither of whom need be an employee or officer of the corporation. If the Board of Directors appoints a Chairman of the Board, such Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors and, if the Chairman of the Board is also designated as the corporation's Chief Executive Officer, shall have the powers and duties of the Chief Executive Officer prescribed in Section 3.7 of these Bylaws. If the Board of Directors appoints a Vice Chairman of the Board, such Vice Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors. Unless otherwise provided by the Board of Directors, the Chairman of the Board or, in the Chairman's absence, the Vice Chairman of the Board, if any, shall preside at all meetings of the Board of Directors.

2.4 Tenure. Each director shall hold office until the next annual meeting of stockholders and until a successor is elected and qualified, or until such director's earlier death, resignation or removal.

2.5 Quorum. The greater of (a) a majority of the directors at any time in office and (b) one-third of the number of directors fixed pursuant to Section 2.2 of these Bylaws shall constitute a quorum of the Board of Directors. If at any meeting of the Board of Directors there shall be less than such a quorum, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

2.6 Action at Meeting. Every act or decision done or made by a majority of the directors present at a meeting of the Board of Directors duly held at which a quorum is present shall be regarded as the act of the Board of Directors, unless a greater number is required by law or by the Certificate of Incorporation.

2.7 Removal. Except as otherwise provided by the General Corporation Law of the State of Delaware, any one or more or all of the directors of the corporation may be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors, except that the directors elected by the holders of a particular class or series of stock may be removed without cause only by vote of the holders of a majority of the outstanding shares of such class or series.

2.8 Vacancies. Subject to the rights of holders of any series of Preferred Stock to elect directors, unless and until filled by the stockholders, any vacancy or newly-created directorship on the Board of Directors, however occurring, may be filled by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director. A director elected to fill a vacancy shall be elected for the unexpired term of such director's predecessor in office, and a director chosen to fill a position resulting from a newly-created directorship shall hold office until the next annual meeting of stockholders and until a successor is elected and qualified, or until such director's earlier death, resignation or removal.

2.9 Resignation. Any director may resign by delivering a resignation in writing or by electronic transmission to the corporation at its principal office or to the Chairman of the Board, the Chief Executive Officer, the President or the Secretary. Such resignation shall be effective upon delivery unless it is specified to be effective at some later time or upon the happening of some later event.

2.10 Regular Meetings. Regular meetings of the Board of Directors may be held without notice at such time and place as shall be determined from time to time by the Board of Directors; provided that any director who is absent when such a determination is made shall be given notice of the determination. A regular meeting of the Board of Directors may be held without notice immediately after and at the same place as the annual meeting of stockholders.

2.11 Special Meetings. Special meetings of the Board of Directors may be held at any time and place designated in the manner specified in Section 2.12 of these Bylaws by the Chairman of the Board, the Chief Executive Officer, the President, two or more directors, or by one director in the event that there is only a single director in office.

2.12 Notice of Special Meetings. Notice of the date, place, if any, and time of any special meeting of directors shall be given to each director by the Secretary or by the officer or one of the directors calling the meeting. Notice shall be duly given to each director (a) in person or by telephone at least 24 hours in advance of the meeting, (b) by sending written notice by reputable overnight courier, telecopy, facsimile or electronic transmission, or delivering written notice by hand, to such director's last known business, home or electronic transmission address at least 48 hours in advance of the meeting, or (c) by sending written notice by first-class mail to such director's last known business or home address at least 72 hours in advance of the meeting. A notice or waiver of notice of a meeting of the Board of Directors need not specify the purposes of the meeting.

2.13 Meetings by Conference Communications Equipment. Directors may participate in meetings of the Board of Directors or any committee thereof by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

2.14 Action by Consent. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent to the action in writing or by electronic transmission, and the written consents or electronic transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

2.15 Committees. The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation with such lawfully delegable powers and duties as the Board of Directors thereby confers, to serve at the pleasure of the Board of Directors. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members of the committee present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board of Directors and subject to the provisions of law, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation and may authorize the seal of the corporation to be affixed to all papers which may require it. Each such committee shall keep minutes and make such reports as the Board of Directors may from time to time request. Except as the Board of Directors may otherwise determine, any committee may make rules for the conduct of its business, but unless otherwise provided by the directors or in such rules, its business shall be conducted as nearly as possible in the same manner as is provided in these Bylaws for the Board of Directors. Except as otherwise provided in the Certificate of Incorporation, these Bylaws, or the resolution of the Board of Directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

2.16 Compensation of Directors. Directors may be paid such compensation for their services and such reimbursement for expenses of attendance at meetings as the Board of Directors may from time to time determine. No such payment shall preclude any director from serving the corporation or any of its parent or subsidiary entities in any other capacity and receiving compensation for such service.

### **ARTICLE III**

#### **OFFICERS**

3.1 Titles. The officers of the corporation shall consist of a Chief Executive Officer, a President, a Secretary, a Treasurer and such other officers with such other titles as the Board of Directors shall determine, including one or more Vice Presidents, Assistant Treasurers and Assistant Secretaries. The Board of Directors may appoint such other officers as it may deem appropriate.

3.2 Election. The Chief Executive Officer, President, Treasurer and Secretary shall be elected annually by the Board of Directors at its first meeting following the annual meeting of stockholders. Other officers may be appointed by the Board of Directors at such meeting or at any other meeting.

3.3 Qualification. No officer need be a stockholder. Any two or more offices may be held by the same person.

3.4 Tenure. Except as otherwise provided by law, by the Certificate of Incorporation or by these Bylaws, each officer shall hold office until such officer's successor is elected and qualified, unless a different term is specified in the resolution electing or appointing such officer, or until such officer's earlier death, resignation or removal.

3.5 Resignation and Removal. Any officer may resign by delivering a written resignation to the corporation at its principal office or to the Chief Executive Officer, the President or the Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some later time or upon the happening of some later event. Any officer may be removed at any time, with or without cause, by vote of a majority of the directors then in office. Except as the Board of Directors may otherwise determine, no officer who resigns or is removed shall have any right to any compensation as an officer for any period following such officer's resignation or removal, or any right to damages on account of such removal, whether such officer's compensation be by the month or by the year or otherwise, unless such compensation is expressly provided for in a duly authorized written agreement with the corporation.

3.6 Vacancies. The Board of Directors may fill any vacancy occurring in any office for any reason and may, in its discretion, leave unfilled for such period as it may determine any offices other than those of Chief Executive Officer, President, Treasurer and Secretary. Each such successor shall hold office for the unexpired term of such officer's predecessor and until a successor is elected and qualified, or until such officer's earlier death, resignation or removal.

3.7 President; Chief Executive Officer. Unless the Board of Directors has designated another person as the corporation's Chief Executive Officer, the President shall be the Chief Executive Officer of the corporation. The Chief Executive Officer shall have general charge and supervision of the business of the corporation subject to the direction of the Board of Directors, and shall perform all duties and have all powers that are commonly incident to the office of chief executive or that are delegated to such officer by the Board of Directors. The President shall perform such other duties and shall have such other powers as the Board of Directors or the Chief Executive Officer (if the President is not the Chief Executive Officer) may from time to time prescribe. In the event of the absence, inability or refusal to act of the Chief Executive Officer or the President (if the President is not the Chief Executive Officer), the Vice President (or if there shall be more than one, the Vice Presidents in the order determined by the Board of Directors) shall perform the duties of the Chief Executive Officer and when so performing such duties shall have all the powers of and be subject to all the restrictions upon the Chief Executive Officer.

3.8 Vice Presidents. Each Vice President shall perform such duties and possess such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. The Board of Directors may assign to any Vice President the title of Executive Vice President, Senior Vice President or any other title selected by the Board of Directors.

3.9 Secretary and Assistant Secretaries. The Secretary shall perform such duties and shall have such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. In addition, the Secretary shall perform such duties and have such powers as are incident to the office of the secretary, including without limitation the duty and power to give notices of all meetings of stockholders and special meetings of the Board of Directors, to attend all meetings of stockholders and the Board of Directors and keep a record of the proceedings, to maintain a stock ledger and prepare lists of stockholders and their addresses as required, to be custodian of corporate records and the corporate seal and to affix and attest to the same on documents.

Any Assistant Secretary shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Secretary may from time to time prescribe. In the event of the absence, inability or refusal to act of the Secretary, the Assistant Secretary (or if there shall be more than one, the Assistant Secretaries in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Secretary.

In the absence of the Secretary or any Assistant Secretary at any meeting of stockholders or directors, the chairman of the meeting shall designate a temporary secretary to keep a record of the meeting.

3.10 Treasurer and Assistant Treasurers. The Treasurer shall perform such duties and shall have such powers as may from time to time be assigned by the Board of Directors or the Chief Executive Officer. In addition, the Treasurer shall perform such duties and have such powers as are incident to the office of treasurer, including without limitation the duty and power to keep and be responsible for all funds and securities of the corporation, to deposit funds of the corporation in depositories selected in accordance with these Bylaws, to disburse such funds as ordered by the Board of Directors, to make proper accounts of such funds, and to render as required by the Board of Directors statements of all such transactions and of the financial condition of the corporation.

The Assistant Treasurers shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Treasurer may from time to time prescribe. In the event of the absence, inability or refusal to act of the Treasurer, the Assistant Treasurer (or if there shall be more than one, the Assistant Treasurers in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Treasurer.

3.11 Salaries. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors.

3.12 Delegation of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

## ARTICLE IV

### CAPITAL STOCK

4.1 Issuance of Stock. Subject to the provisions of the Certificate of Incorporation, the whole or any part of any unissued balance of the authorized capital stock of the corporation or the whole or any part of any shares of the authorized capital stock of the corporation held in the corporation's treasury may be issued, sold, transferred or otherwise disposed of by vote of the Board of Directors in such manner, for such lawful consideration and on such terms as the Board of Directors may determine.

4.2 Stock Certificates; Uncertificated Shares. The shares of the corporation shall be represented by certificates, provided that the Board of Directors may provide by resolution or resolutions that some or all of any or all classes or series of the corporation's stock shall be uncertificated shares. Every holder of stock of the corporation represented by certificates shall be entitled to have a certificate, in such form as may be prescribed by law and by the Board of Directors, representing the number of shares held by such holder registered in certificate form. Each such certificate shall be signed in a manner that complies with Section 158 of the General Corporation Law of the State of Delaware.

Each certificate for shares of stock which are subject to any restriction on transfer pursuant to the Certificate of Incorporation, these Bylaws, applicable securities laws or any agreement among any number of stockholders or among such holders and the corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

If the corporation shall be authorized to issue more than one class of stock or more than one series of any class, the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of each certificate representing shares of such class or series of stock, provided that in lieu of the foregoing requirements there may be set forth on the face or back of each certificate representing shares of such class or series of stock a statement that the corporation will furnish without charge to each stockholder who so requests a copy of the full text of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

Within a reasonable time after the issuance or transfer of uncertificated shares, the corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to Sections 151, 202(a) or 218(a) of the General Corporation Law of the State of Delaware or, with respect to Section 151 of the General Corporation Law of the State of Delaware, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

4.3 Transfers. Shares of stock of the corporation shall be transferable in the manner prescribed by law and in these Bylaws. Transfers of shares of stock of the corporation shall be made only on the books of the corporation or by transfer agents designated to transfer shares of stock of the corporation. Subject to applicable law, shares of stock represented by certificates shall be transferred only on the books of the corporation by the surrender to the corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Except as may be otherwise required by law, by the Certificate of Incorporation or by these Bylaws, the corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to such stock, regardless of any transfer, pledge or other disposition of such stock until the shares have been transferred on the books of the corporation in accordance with the requirements of these Bylaws.

4.4 Lost, Stolen or Destroyed Certificates. The corporation may issue a new certificate of stock in place of any previously issued certificate alleged to have been lost, stolen or destroyed, upon such terms and conditions as the Board of Directors may prescribe, including the presentation of reasonable evidence of such loss, theft or destruction and the giving of such indemnity and posting of such bond as the Board of Directors may require for the protection of the corporation or any transfer agent or registrar.

4.5 Record Date. The Board of Directors may fix in advance a date as a record date for the determination of the stockholders entitled to notice of or to vote at any meeting of stockholders or to express consent (or dissent) to corporate action without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action. Such record date shall not precede the date on which the resolution fixing the record date is adopted, and such record date shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 10 days after the date of adoption of a record date for a consent without a meeting, nor more than 60 days prior to any other action to which such record date relates.

If no record date is fixed, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day before the day on which notice is given, or, if notice is waived, at the close of business on the day before the day on which the meeting is held. If no record date is fixed, the record date for determining stockholders entitled to express consent to corporate action without a meeting, when no prior action by the Board of Directors is necessary, shall be the day on which the first consent is properly delivered to the corporation. If no record date is fixed, the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating to such purpose.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.



4.6 Regulations. The issue, transfer, conversion and registration of shares of stock of the corporation shall be governed by such other regulations as the Board of Directors may establish.

## **ARTICLE V**

### **GENERAL PROVISIONS**

5.1 Fiscal Year. Except as from time to time otherwise designated by the Board of Directors, the fiscal year of the corporation shall begin on the first day of January of each year and end on the last day of December in each year.

5.2 Corporate Seal. The corporate seal shall be in such form as shall be approved by the Board of Directors.

5.3 Waiver of Notice. Whenever notice is required to be given by law, by the Certificate of Incorporation or by these Bylaws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before, at or after the time of the event for which notice is to be given, shall be deemed equivalent to notice required to be given to such person. Neither the business nor the purpose of any meeting need be specified in any such waiver. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

5.4 Voting of Securities. Except as the Board of Directors may otherwise designate, the Chief Executive Officer, the President or the Treasurer may waive notice of, vote, or appoint any person or persons to vote, on behalf of the corporation at, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for this corporation (with or without power of substitution) at, any meeting of stockholders or securityholders of any other entity, the securities of which may be held by this corporation.

5.5 Evidence of Authority. A certificate by the Secretary, or an Assistant Secretary, or a temporary Secretary, as to any action taken by the stockholders, directors, a committee or any officer or representative of the corporation shall as to all persons who rely on the certificate in good faith be conclusive evidence of such action.

5.6 Certificate of Incorporation. All references in these Bylaws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as amended and in effect from time to time.

5.7 Severability. Any determination that any provision of these Bylaws is for any reason inapplicable, illegal or ineffective shall not affect or invalidate any other provision of these Bylaws.

5.8 Pronouns. All pronouns used in these Bylaws shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the person or persons may require.

## **ARTICLE VI**

### **AMENDMENTS**

6.1 By the Board of Directors. These Bylaws may be altered, amended or repealed, in whole or in part, or new bylaws may be adopted by the Board of Directors.

6.2 By the Stockholders. Except as otherwise provided by the Certificate of Incorporation, these Bylaws may be altered, amended or repealed, in whole or in part, or new bylaws may be adopted by the affirmative vote of the holders of a majority of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at any annual meeting of stockholders, or at any special meeting of stockholders, provided notice of such alteration, amendment, repeal or adoption of new bylaws shall have been stated in the notice of such special meeting.

CERTAIN CONFIDENTIAL PORTIONS OF THIS EXHIBIT HAVE BEEN OMITTED AND REPLACED WITH “[\*\*\*]”. SUCH IDENTIFIED INFORMATION HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS (I) NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF DISCLOSED.

**FOURTH AMENDED AND RESTATED  
INVESTORS’ RIGHTS AGREEMENT**

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**FOURTH AMENDED AND RESTATED  
INVESTORS' RIGHTS AGREEMENT**

THIS FOURTH AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "**Agreement**"), is made as of the 18th day of December, 2020, by and among Ikena Oncology, Inc., a Delaware corporation (the "**Company**"), each of the investors listed on Schedule A hereto (the "**Investors**") and each of the stockholders listed on Schedule B hereto, each of whom is referred to herein as a "**Key Holder**".

**RECITALS**

**WHEREAS**, the Company, certain of the Investors and the Key Holders entered into that certain Third Amended and Restated Investors' Rights Agreement dated as of October 1, 2020 (the "**Prior Agreement**");

**WHEREAS**, the Company and certain Investors are parties to that Series B Preferred Stock Purchase Agreement, of even date herewith (the "**Series B Purchase Agreement**"), pursuant to which such Investors have agreed to purchase shares of the Company's Series B Preferred Stock (as defined below);

**WHEREAS**, the Key Holders and the Company desire to further induce such Investors to purchase Series B Preferred Stock;

**WHEREAS**, the Investors and the Company hereby agree that this Agreement shall govern the rights of the Investors to cause the Company to register shares of Common Stock issuable to the Investors, to receive certain information from the Company, and to participate in future equity offerings by the Company, and shall govern certain other matters as set forth in this Agreement; and

**WHEREAS**, the Company and certain stockholders representing the Required Holders (as defined in the Prior Agreement) desire that the Prior Agreement be amended and restated as set forth herein.

**NOW, THEREFORE**, in consideration of the mutual promises and obligations contained herein, the parties hereby agree to amend and restate the Prior Agreement as follows:

1. **Definitions**. For purposes of this Agreement:

1.1 "**Affiliate**" means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including, without limitation, any general partner, managing partner, member, manager, officer or director of such Person or any venture capital fund or other investment fund now or hereafter existing that is controlled by one or more general partners or managing members, or shares the same management company or investment adviser with, such Person.

1.2 "**Celgene**" means Celgene Corporation.

1.3 “**Certificate of Incorporation**” means the Fourth Amended and Restated Certificate of Incorporation of the Company, as amended and/or restated from time to time.

1.4 “**Common Stock**” means shares of the Company’s common stock, par value \$0.001 per share.

1.5 “**Competitor**” means a Person engaged, directly or indirectly (including through any partnership, limited liability company, corporation, joint venture or similar arrangement (whether now existing or formed hereafter)), in any business or enterprise that is competitive with the Company’s business; provided, however, the term “**Competitor**” shall not include (i) as of the date of this Agreement and subject to the last sentence of this definition, Celgene, and (ii) any financial investment firm or collective investment vehicle (including any venture capital fund or other investment fund). For purposes of clarity, if Celgene or a financial investment firm or collective investment vehicle (including any venture capital fund or other investment fund) owns a portfolio company (or an interest in a portfolio company) that is competitive with the Company’s business, Celgene or such financial investment firm or collective investment vehicle (including any venture capital fund or other investment fund) shall not be deemed to be a “**Competitor**” but such portfolio company shall be deemed to be a “**Competitor**”. Subject to the foregoing sentence, the Board of Directors of the Company (the “**Board of Directors**”) may make a unanimous determination (in good faith) that Celgene should be deemed a Competitor at any future time if Celgene or any Affiliate thereof engages in any competitive activities including, but not limited to research, development or commercialization of products that bind or modulate the targets to which the products the Company is researching, developing or commercializing bind or modulate.

1.6 “**Damages**” means any loss, damage, claim or liability (joint or several) to which a party hereto may become subject under the Securities Act, the Exchange Act, or other federal or state law, insofar as such loss, damage, claim or liability (or any action in respect thereof) arises out of or is based upon: (i) any untrue statement or alleged untrue statement of a material fact contained in any registration statement of the Company, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (ii) an omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (iii) any violation or alleged violation by the indemnifying party (or any of its agents or Affiliates) of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act, or any state securities law.

1.7 “**Derivative Securities**” means any securities or rights convertible into, or exercisable or exchangeable for (in each case, directly or indirectly), Common Stock, including options and warrants.

1.8 “**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

1.9 “**Excluded Registration**” means (i) a registration relating to the sale of securities to employees of the Company or a subsidiary pursuant to a stock option, stock purchase, or similar plan; (ii) a registration relating to an SEC Rule 145 transaction; (iii) a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities; or (iv) a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

1.10 “**Fidelity Investors**” means the Investors advised or sub-advised by Fidelity Management & Research Company LLC or affiliated investment advisers.

1.11 “**FOIA Party**” means a Person that, in the reasonable determination of the Board of Directors, may be subject to, and thereby required to disclose non-public information furnished by or relating to the Company under, the Freedom of Information Act, 5 U.S.C. 552 (“**FOIA**”), any state public records access law, any state or other jurisdiction’s laws similar in intent or effect to FOIA, or any other similar statutory or regulatory requirement.

1.12 “**Form S-1**” means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

1.13 “**Form S-3**” means such form under the Securities Act as in effect on the date hereof or any registration form under the Securities Act subsequently adopted by the SEC that permits incorporation of substantial information by reference to other documents filed by the Company with the SEC.

1.14 “**GAAP**” means generally accepted accounting principles in the United States.

1.15 “**Holder**” means any holder of Registrable Securities who is a party to this Agreement.

1.16 “**Immediate Family Member**” means a child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including, adoptive relationships, of a natural person referred to herein.

1.17 “**Initiating Holders**” means, collectively, Holders who properly initiate a registration request under this Agreement.

1.18 “**IPO**” means the Company’s first underwritten public offering of its Common Stock under the Securities Act.



1.19 “**Key Holder Registrable Securities**” means (i) any Common Stock currently held or hereafter acquired by the Key Holders (including any shares of Common Stock issued to Key Holders pursuant to that certain Restricted Stock Agreement, dated as of the January 11, 2019 (the “**AskAt RSA**”) by and between the Company and those persons affiliated with AskAt, Inc. or pursuant to other Restricted Stock Agreement by and between the Company and certain Key Holders); and (ii) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced above; and excluding for purposes of Section 2 any shares for which registration rights have terminated pursuant to Subsection 2.13 of this Agreement.

1.20 “**Major Investor**” means any Investor that, individually or together with such Investor’s Affiliates, holds at least 2,000,000 shares of Registrable Securities (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof) and each Person to whom any of the right of any such Investor are assigned pursuant to Section 6.1 of this Agreement.

1.21 “**New Securities**” means, collectively, equity securities of the Company, whether or not currently authorized, as well as rights, options, or warrants to purchase such equity securities, or securities of any type whatsoever that are, or may become, convertible or exchangeable into or exercisable for such equity securities.

1.22 “**Person**” means any individual, corporation, partnership, trust, limited liability company, association or other entity.

1.23 “**Preferred Director**” means any director of the Company that the holders of record of the Preferred Stock are entitled to elect pursuant to the Company’s Certificate of Incorporation.

1.24 “**Preferred Stock**” means the Series A Preferred Stock, the Series A-1 Preferred Stock, the Series A-2 Preferred Stock and the Series B Preferred Stock.

1.25 “**Registrable Securities**” means (i) the Common Stock issuable or issued upon conversion of Preferred Stock; (ii) any Common Stock, or any Common Stock issued or issuable (directly or indirectly) upon conversion and/or exercise of any other securities of the Company, acquired by the Investors after the date hereof; (iii) the Key Holder Registrable Securities, provided, however, that such Key Holder Registrable Securities shall not be deemed Registrable Securities and the Key Holders shall not be deemed Holders for the purposes of Subsections 2.10, 3.1, 3.2, 4.1 and 6.6; and (iv) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in clauses (i) and (ii) above; excluding in all cases, however, any Registrable Securities sold by a Person in a transaction in which the applicable rights under this Agreement are not assigned pursuant to Subsection 6.1, and excluding for purposes of Section 2 any shares for which registration rights have terminated pursuant to Subsection 2.13 of this Agreement.

1.26 “**Registrable Securities then outstanding**” means the number of shares determined by adding the number of shares of outstanding Common Stock that are Registrable Securities and the number of shares of Common Stock issuable (directly or indirectly) pursuant to then exercisable and/or convertible securities that are Registrable Securities.

2.12(b) hereof. 1.27 “**Restricted Securities**” means the securities of the Company required to be notated with the legend set forth in Subsection

1.28 “**SEC**” means the Securities and Exchange Commission.

1.29 “**SEC Rule 144**” means Rule 144 promulgated by the SEC under the Securities Act.

1.30 “**SEC Rule 145**” means Rule 145 promulgated by the SEC under the Securities Act.

1.31 “**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

1.32 “**Selling Expenses**” means all underwriting discounts, selling commissions, and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for any Holder, except for the fees and disbursements of the Selling Holder Counsel borne and paid by the Company as provided in Subsection 2.6.

1.33 “**Series A Preferred Stock**” means shares of the Company’s Series A Preferred Stock, par value \$0.001 per share.

1.34 “**Series A-1 Preferred Stock**” means shares of the Company’s Series A-1 Preferred Stock, par value \$0.001 per share.

1.35 “**Series A-2 Preferred Stock**” means shares of the Company’s Series A-2 Preferred Stock, par value \$0.001 per share.

1.36 “**Series B Preferred Stock**” means shares of the Company’s Series B Preferred Stock, par value \$0.001 per share.

2. Registration Rights. The Company covenants and agrees as follows:

2.1 Demand Registration.

(a) Form S-1 Demand. If at any time after one hundred eighty (180) days after the effective date of the registration statement for the IPO, the Company receives a request from Holders of at least forty percent (40%) of the Registrable Securities then outstanding (excluding any Key Holder Registrable Securities) that the Company file a Form S-1 registration statement with respect to at least twenty percent (20%) of the Registrable Securities then outstanding (or a lesser percent if the anticipated aggregate offering price, net of Selling Expenses, would exceed \$10 million), then the Company shall (x) within ten (10) days after the date such request is given, give notice thereof (the “**Demand Notice**”) to all Holders other than the Initiating Holders; and (y) as soon as practicable, and in any event within sixty (60) days after the date such request is given by the Initiating Holders, file a Form S-1 registration statement under the Securities Act covering all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the Demand Notice is given, and in each case, subject to the limitations of Subsections 2.1(c) and 2.3.

(b) **Form S-3 Demand.** If at any time when it is eligible to use a Form S-3 registration statement, the Company receives a request from Holders of at least twenty percent (20%) of the Registrable Securities then outstanding (excluding any Key Holder Registrable Securities) that the Company file a Form S-3 registration statement with respect to outstanding Registrable Securities of such Holders having an anticipated aggregate offering price, net of Selling Expenses, of at least \$3 million, then the Company shall (i) within ten (10) days after the date such request is given, give a Demand Notice to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within forty-five (45) days after the date such request is given by the Initiating Holders, file a Form S-3 registration statement under the Securities Act covering all Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the Demand Notice is given, and in each case, subject to the limitations of Subsections 2.1(c) and 2.3.

(c) Notwithstanding the foregoing obligations, if the Company furnishes to Holders requesting a registration pursuant to this Subsection 2.1 a certificate signed by the Company's chief executive officer stating that in the good faith judgment of the Company's Board of Directors it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential; or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act, then the Company shall have the right to defer taking action with respect to such filing, and any time periods with respect to filing or effectiveness thereof shall be tolled correspondingly, for a period of not more than ninety (90) days after the request of the Initiating Holders is given; provided, however, that the Company may not invoke this right more than once in any twelve (12) month period; and provided further that the Company shall not register any securities for its own account or that of any other stockholder during such ninety (90) day period other than an Excluded Registration.

(d) The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Subsection 2.1(a), (i) during the period that is sixty (60) days before the Company's good faith estimate of the date of filing of, and ending on a date that is one hundred eighty (180) days after the effective date of, a Company-initiated registration, provided that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; (ii) after the Company has effected two (2) registrations pursuant to Subsection 2.1(a); or (iii) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Subsection 2.1(b). The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Subsection 2.1(b) (i) during the period that is thirty (30) days before the Company's good faith estimate of the date of filing of, and ending on a date that is ninety (90) days after the effective date of, a Company-initiated registration, provided that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; or (ii) if the Company has effected two registrations pursuant to Subsection 2.1(b) within the twelve (12) month period immediately preceding the date of such request. A registration shall not be counted as "effected" for purposes of this Subsection 2.1(d) until such time as the applicable registration statement has been declared effective by the SEC, unless the Initiating Holders withdraw their request for such registration, elect not to pay the registration expenses therefor, and forfeit their right to one demand registration statement pursuant to Subsection 2.6, in which case such withdrawn registration statement shall be counted as "effected" for purposes of this Subsection 2.1(d).

2.2 Company Registration. If the Company proposes to register (including, for this purpose, a registration effected by the Company for stockholders other than the Holders) any of its Common Stock under the Securities Act in connection with the public offering of such securities solely for cash (other than in an Excluded Registration), the Company shall, at such time, promptly give each Holder notice of such registration. Upon the request of each Holder given within twenty (20) days after such notice is given by the Company, the Company shall, subject to the provisions of Subsection 2.3, cause to be registered all of the Registrable Securities that each such Holder has requested to be included in such registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Subsection 2.2 before the effective date of such registration, whether or not any Holder has elected to include Registrable Securities in such registration. The expenses (other than Selling Expenses) of such withdrawn registration shall be borne by the Company in accordance with Subsection 2.6.

2.3 Underwriting Requirements.

(a) If, pursuant to Subsection 2.1, the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Subsection 2.1, and the Company shall include such information in the Demand Notice. The underwriter(s) will be selected by the Company and shall be reasonably acceptable to a majority in interest of the Initiating Holders. In such event, the right of any Holder to include such Holder's Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Subsection 2.4(e)) enter into an underwriting agreement in customary form with the underwriter(s) selected for such underwriting. Notwithstanding any other provision of this Subsection 2.3, if the managing underwriter(s) advise(s) the Initiating Holders in writing that marketing factors require a limitation on the number of shares to be underwritten, then the Initiating Holders shall so advise all Holders of Registrable Securities that otherwise would be underwritten pursuant hereto, and the number of Registrable Securities that may be included in the underwriting shall be allocated among such Holders of Registrable Securities, including the Initiating Holders, in proportion (as nearly as practicable) to the number of Registrable Securities owned by each Holder or in such other proportion as shall mutually be agreed to by all such selling Holders; provided, however, that (i) the number of Registrable Securities held by the Holders to be included in such underwriting shall not be reduced unless all other securities are first entirely excluded from the underwriting and (ii) any Registrable Securities which are not Key Holder Registrable Securities shall not be excluded from such underwriting unless all Key Holder Registrable Securities are first excluded from such offering. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest one hundred (100) shares.

(b) In connection with any offering involving an underwriting of shares of the Company's capital stock pursuant to Subsection 2.2, the Company shall not be required to include any of the Holders' Registrable Securities in such underwriting unless the Holders accept the terms of the underwriting as agreed upon between the Company and its underwriters, and then only in such quantity as the underwriters in their sole discretion determine will not jeopardize the success of the offering by the Company. If the total number of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the number of securities to be sold (other than by the Company) that the underwriters in their reasonable discretion determine is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, which the underwriters and the Company in their sole discretion determine will not jeopardize the success of the offering. If the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be allocated among the selling Holders in proportion (as nearly as practicable to) the number of Registrable Securities owned by each selling Holder or in such other proportions as shall mutually be agreed to by all such selling Holders; provided, however, that any Registrable Securities which are not Key Holder Registrable Securities shall not be excluded from such underwriting unless all Key Holder Registrable Securities are first excluded from such offering. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest one hundred (100) shares. Notwithstanding the foregoing, in no event shall (i) the number of Registrable Securities included in the offering be reduced unless all other securities (other than securities to be sold by the Company) are first entirely excluded from the offering, or (ii) the number of Registrable Securities included in the offering be reduced below thirty percent (30%) of the total number of securities included in such offering, unless such offering is the IPO, in which case the selling Holders may be excluded further if the underwriters make the determination described above and no other stockholder's securities are included in such offering. For purposes of the provision in this Subsection 2.3(b) concerning apportionment, for any selling Holder that is a partnership, limited liability company, or corporation, the partners, members, retired partners, retired members, stockholders, and Affiliates of such Holder, or the estates and Immediate Family Members of any such partners, retired partners, members, and retired members and any trusts for the benefit of any of the foregoing Persons, shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate number of Registrable Securities owned by all Persons included in such "selling Holder," as defined in this sentence.

(c) For purposes of Subsection 2.1, a registration shall not be counted as “effected” if, as a result of an exercise of the underwriter’s cutback provisions in Subsection 2.3(a), fewer than fifty percent (50%) of the total number of Registrable Securities that Holders have requested to be included in such registration statement are actually included.

2.4 Obligations of the Company. Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its commercially reasonable efforts to cause such registration statement to become effective and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to one hundred twenty (120) days or, if earlier, until the distribution contemplated in the registration statement has been completed; provided, however, that (i) such one hundred twenty (120) day period shall be extended for a period of time equal to the period the Holder refrains, at the request of an underwriter of Common Stock (or other securities) of the Company, from selling any securities included in such registration, and (ii) in the case of any registration of Registrable Securities on Form S-3 that are intended to be offered on a continuous or delayed basis, subject to compliance with applicable SEC rules, such one hundred twenty (120) day period shall be extended for up to an additional one hundred twenty (120) days, if necessary, to keep the registration statement effective until all such Registrable Securities are sold;

(b) prepare and file with the SEC such amendments and supplements to such registration statement, and the prospectus used in connection with such registration statement, as may be necessary to comply with the Securities Act in order to enable the disposition of all securities covered by such registration statement;

(c) furnish to the selling Holders such numbers of copies of a prospectus, including a preliminary prospectus, as required by the Securities Act, and such other documents as the Holders may reasonably request in order to facilitate their disposition of their Registrable Securities;

(d) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the selling Holders; provided that the Company shall not be required to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the underwriter(s) of such offering;

(f) use its commercially reasonable efforts to cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange or trading system and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(g) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and provide a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(h) promptly make available for inspection by the selling Holders, any managing underwriter(s) participating in any disposition pursuant to such registration statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent, in each case, as necessary or advisable to verify the accuracy of the information in such registration statement and to conduct appropriate due diligence in connection therewith;

(i) notify each selling Holder, promptly after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed; and

(j) after such registration statement becomes effective, notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus.

In addition, the Company shall ensure that, at all times after any registration statement covering a public offering of securities of the Company under the Securities Act shall have become effective, its insider trading policy shall provide that the Company's directors may implement a trading program under Rule 10b5-1 of the Exchange Act.

2.5 Furnish Information. It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as is reasonably required to effect the registration of such Holder's Registrable Securities.

2.6 Expenses of Registration. All expenses (other than Selling Expenses) incurred in connection with registrations, filings, or qualifications pursuant to Section 2, including all registration, filing, and qualification fees; printers' and accounting fees; fees and disbursements of counsel for the Company; and the reasonable fees and disbursements of one counsel for the selling Holders ("**Selling Holder Counsel**"), shall be borne and paid by the Company; provided, however, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Subsection 2.1 if the registration request is subsequently withdrawn at the request of the Initiating Holders (in which case all selling Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless the Initiating Holders agree to forfeit their right to one registration pursuant to Subsections 2.1(a) or 2.1(b), as the case may be; provided further that if, at the time of such withdrawal, the Holders shall have learned of a material adverse change in the condition, business, or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness after learning of such information, then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one registration pursuant to Subsections 2.1(a) or 2.1(b). All Selling Expenses relating to Registrable Securities registered pursuant to this Section 2 shall be borne and paid by the Holders pro rata on the basis of the number of Registrable Securities registered on their behalf.

2.7 Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any registration pursuant to this Agreement as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

2.8 Indemnification. If any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, and the partners, members, officers, directors, and stockholders of each such Holder; legal counsel, accountants and investment advisers for each such Holder; any underwriter (as defined in the Securities Act) for each such Holder; and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any Damages, and the Company will pay to each such Holder, underwriter, controlling Person, or other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Subsection 2.8(a) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable for any Damages to the extent that they arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of any such Holder, underwriter, controlling Person, or other aforementioned Person expressly for use in connection with such registration.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, and each of its directors, each of its officers who has signed the registration statement, each Person (if any), who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company, any underwriter (as defined in the Securities Act), any other Holder selling securities in such registration statement, and any controlling Person of any such underwriter or other Holder, against any Damages, in each case only to the extent that such Damages arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of such selling Holder expressly for use in connection with such registration; and each such selling Holder will pay to the Company and each other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Subsection 2.8(b) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; and provided further that in no event shall the aggregate amounts payable by any Holder by way of indemnity or contribution under Subsections 2.8(b) and 2.8(d) exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of fraud or willful misconduct by such Holder.



(c) Promptly after receipt by an indemnified party under this Subsection 2.8 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Subsection 2.8, give the indemnifying party notice of the commencement thereof. The indemnifying party shall have the right to participate in such action and, to the extent the indemnifying party so desires, participate jointly with any other indemnifying party to which notice has been given, and to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such action.

(d) To provide for just and equitable contribution to joint liability under the Securities Act in any case in which either: (i) any party otherwise entitled to indemnification hereunder makes a claim for indemnification pursuant to this Subsection 2.8 but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case, notwithstanding the fact that this Subsection 2.8 provides for indemnification in such case, or (ii) contribution under the Securities Act may be required on the part of any party hereto for which indemnification is provided under this Subsection 2.8, then, and in each such case, such parties will contribute to the aggregate losses, claims, damages, liabilities, or expenses to which they may be subject (after contribution from others) in such proportion as is appropriate to reflect the relative fault of each of the indemnifying party and the indemnified party in connection with the statements, omissions, or other actions that resulted in such loss, claim, damage, liability, or expense, as well as to reflect any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or allegedly untrue statement of a material fact, or the omission or alleged omission of a material fact, relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission; provided, however, that, in any such case (x) no Holder will be required to contribute any amount in excess of the public offering price of all such Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Subsection 2.8(d), when combined with the amounts paid or payable by such Holder pursuant to Subsection 2.8(b), exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of willful misconduct or fraud by such Holder.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control; provided, however, that any matter expressly provided for or addressed by the foregoing provisions that is not expressly provided for or addressed by the underwriting agreement shall be controlled by the foregoing provisions.

(f) Unless otherwise superseded by an underwriting agreement entered into in connection with the underwritten public offering, the obligations of the Company and Holders under this Subsection 2.8 shall survive the completion of any offering of Registrable Securities in a registration under this Section 2, and otherwise shall survive the termination of this Agreement.

2.9 Reports Under Exchange Act. With a view to making available to the Holders the benefits of SEC Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company shall:

(a) make and keep available adequate current public information, as those terms are understood and defined in SEC Rule 144, at all times after the effective date of the registration statement filed by the Company for the IPO;

(b) use commercially reasonable efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act (at any time after the Company has become subject to such reporting requirements); and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) to the extent accurate, a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after ninety (90) days after the effective date of the registration statement filed by the Company for the IPO), the Securities Act, and the Exchange Act (at any time after the Company has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after the Company so qualifies); and (ii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration (at any time after the Company has become subject to the reporting requirements under the Exchange Act) or pursuant to Form S-3 (at any time after the Company so qualifies to use such form).

2.10 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of a majority of the Registrable Securities then outstanding, enter into any agreement with any holder or prospective holder of any securities of the Company that would (i) allow such holder or prospective holder to include such securities in any registration unless, under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the number of the Registrable Securities of the Holders that are included; or (ii) allow such holder or prospective holder to initiate a demand for registration of any securities held by such holder or prospective holder.

2.11 "Market Stand-off" Agreement. Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the IPO and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days), (i) lend; offer; pledge; sell; contract to sell; sell any option or contract to purchase; purchase any option or contract to sell; grant any option, right, or warrant to purchase; or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock held by such Holder immediately prior to the IPO or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise. The foregoing provisions of this Subsection 2.11 shall apply only to the IPO, and shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, the sale of any shares purchased in connection with the IPO, transactions (including, without limitation, any swap, hedge or similar agreement or arrangement) or announcements, in each case, relating to securities acquired in the IPO or securities acquired in open market or other transactions from and after the IPO or that otherwise do not involve or relate to securities of the Company owned by a Holder prior to the IPO, or the transfer of any shares to any trust for the direct or indirect benefit of the Holder or the immediate family of the Holder, provided that the trustee of the trust agrees to be bound in writing by the restrictions set forth herein, and provided further that any such transfer shall not involve a disposition for value, and shall be applicable to the Holders only if all officers, directors and stockholders owning 1% or more of the Company's outstanding Common Stock (after giving effect to conversion into Common Stock of all outstanding Preferred Stock) are subject to the same restrictions. The underwriters in connection with such registration are intended third-party beneficiaries of this Subsection 2.11 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in connection with such registration that are consistent with this Subsection 2.11 or that are necessary to give further effect thereto. In the event that the Company or the managing underwriter waives or terminates any of the restrictions contained in this Subsection 2.11 or in a lock-up agreement with respect to the securities of any Holder, officer, director or one-percent or greater stockholder of the Company (in any such case, the "**Released Securities**"), the restrictions contained in this Subsection 2.11 and in any lock-up agreements executed by the Holders shall be waived or terminated, as applicable, to the same extent and with respect to the same percentage of securities of each Holder as the percentage of Released Securities represent with respect to the securities held by the applicable Holder, officer, director or one-percent or greater stockholder.

## 2.12 Restrictions on Transfer.

(a) The Preferred Stock and the Registrable Securities shall not be sold, pledged, or otherwise transferred, and the Company shall not recognize and shall issue stop-transfer instructions to its transfer agent with respect to any such sale, pledge, or transfer, except upon the conditions specified in this Agreement, which conditions are intended to ensure compliance with the provisions of the Securities Act. A transferring Holder will cause any proposed purchaser, pledgee, or transferee of the Preferred Stock and the Registrable Securities held by such Holder to agree to take and hold such securities subject to the provisions and upon the conditions specified in this Agreement. Notwithstanding the foregoing, the Company shall not require any transferee of shares pursuant to an effective registration statement or, following the IPO, SEC Rule 144 to be bound by the terms of this Agreement.

(b) Each certificate, instrument, or book entry representing (i) the Preferred Stock, (ii) the Registrable Securities, and (iii) any other securities issued in respect of the securities referenced in clauses (i) and (ii), upon any stock split, stock dividend, recapitalization, merger, consolidation, or similar event, shall (unless otherwise permitted by the provisions of Subsection 2.12(c)) be notated with a legend substantially in the following form:

THE SECURITIES REPRESENTED HEREBY HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. SUCH SHARES MAY NOT BE SOLD, PLEDGED, OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR A VALID EXEMPTION FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

THE SECURITIES REPRESENTED HEREBY MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

The Holders consent to the Company making a notation in its records and giving instructions to any transfer agent of the Restricted Securities in order to implement the restrictions on transfer set forth in this Subsection 2.12.

(c) The holder of such Restricted Securities, by acceptance of ownership thereof, agrees to comply in all respects with the provisions of this Section 2. Before any proposed sale, pledge, or transfer of any Restricted Securities, unless there is in effect a registration statement under the Securities Act covering the proposed transaction or, following the IPO, the transfer is made pursuant to SEC Rule 144, the Holder thereof shall give notice to the Company of such Holder's intention to effect such sale, pledge, or transfer. Each such notice shall describe the manner and circumstances of the proposed sale, pledge, or transfer in sufficient detail and, if reasonably requested by the Company, shall be accompanied at such Holder's expense by either (i) a written opinion of legal counsel who shall, and whose legal opinion shall, be reasonably satisfactory to the Company, addressed to the Company, to the effect that the proposed transaction may be effected without registration under the Securities Act; (ii) a "no action" letter from the SEC to the effect that the proposed sale, pledge, or transfer of such Restricted Securities without registration will not result in a recommendation by the staff of the SEC that action be taken with respect thereto; or (iii) any other evidence reasonably satisfactory to counsel to the Company to the effect that the proposed sale, pledge, or transfer of the Restricted Securities may be effected without registration under the Securities Act, whereupon the Holder of such Restricted Securities shall be entitled to sell, pledge, or transfer such Restricted Securities in accordance with the terms of the notice given by the Holder to the Company. The Company will not require such a legal opinion or "no action" letter (x) in any transaction in compliance with SEC Rule 144; or (y) in any transaction in which such Holder distributes Restricted Securities to an Affiliate of such Holder for no consideration or (z) in any internal transaction in which such Holder transfers Restricted Securities to an Affiliate of such Holder that is an entity and that is ultimately controlled by the same parent company as the Holder (or is the ultimate parent company of the Holder); provided that, in the case of clauses (y) and (z); other than in connection with a transaction in compliance with SEC Rule 144 following the IPO, each transferee agrees in writing to be subject to the terms of this Subsection 2.12. Notwithstanding the foregoing, the Company shall be obligated to reissue promptly unlegended certificates or book entries at the request of any Holder thereof if the Company has completed its IPO and the Holder shall have obtained an opinion of counsel (which counsel may be counsel to the Company) to the effect that the securities proposed to be disposed of may lawfully be so disposed of without registration, qualification and legend, provided that the second legend listed above shall be removed only at such time as the Holder of such certificate is no longer subject to any restrictions hereunder. Each certificate, instrument, or book entry representing the Restricted Securities transferred as above provided shall be notated with, except if such transfer is made pursuant to SEC Rule 144 or pursuant to an effective registration statement, the appropriate restrictive legend set forth in Subsection 2.12(b), except that such certificate instrument, or book entry shall not be notated with such restrictive legend if, in the opinion of counsel for such Holder and the Company, such legend is not required in order to establish compliance with any provisions of the Securities Act.

2.13 Termination of Registration Rights. The right of any Holder to request registration or inclusion of Registrable Securities in any registration pursuant to Subsections 2.1 or 2.2 shall terminate upon the earliest to occur of:

- (a) the closing of a Deemed Liquidation Event (as defined in the Company's Certificate of Incorporation);
- (b) such time following the IPO as SEC Rule 144 or another similar exemption under the Securities Act is available for the sale of all of such Holder's shares without limitation during a three-month period without registration; and
- (c) the fifth anniversary of the IPO.

### 3. Information Rights.

#### 3.1 Delivery of Financial Statements. The Company shall deliver to each Major Investor:

(a) as soon as practicable, but in any event within one hundred twenty (120) days after the end of each fiscal year of the Company, (i) a balance sheet as of the end of such year, (ii) statements of income and of cash flows for such year, and a comparison between (x) the actual amounts as of and for such fiscal year and (y) the comparable amounts for the prior year and as included in the Budget (as defined in Subsection 3.1(e)) for such year, with an explanation of any material differences between such amounts and a schedule as to the sources and applications of funds for such year, and (iii) a statement of stockholders' equity as of the end of such year, all such financial statements audited and certified by independent public accountants of nationally recognized standing selected by the Company;

(b) as soon as practicable, but in any event within forty-five (45) days after the end of each of the first three (3) quarters of each fiscal year of the Company, unaudited statements of income and cash flows for such fiscal quarter, and an unaudited balance sheet and a statement of stockholders' equity as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments; and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(c) as soon as practicable, but in any event within forty-five (45) days after the end of each quarter of each fiscal year of the Company, a statement showing the number of shares of each class and series of capital stock and securities convertible into or exercisable for shares of capital stock outstanding at the end of the period, the Common Stock issuable upon conversion or exercise of any outstanding securities convertible or exercisable for Common Stock and the exchange ratio or exercise price applicable thereto, and the number of shares of issued stock options and stock options not yet issued but reserved for issuance, if any, all in sufficient detail as to permit the Major Investors to calculate their respective percentage equity ownership in the Company, and certified by the chief financial officer or chief executive officer of the Company as being true, complete, and correct;

(d) as soon as practicable, but in any event within thirty (30) days of the end of each month, an unaudited income statement and statement of cash flows for such month, and an unaudited balance sheet and statement of stockholders' equity as of the end of such month, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(e) as soon as practicable, but in any event thirty (30) days before the end of each fiscal year, a budget and business plan for the next fiscal year (collectively, the "**Budget**"), approved by the Board of Directors and prepared on a monthly basis, including balance sheets, income statements, and statements of cash flow for such months and, promptly after prepared, any other budgets or revised budgets prepared by the Company; and

(f) such other information relating to the financial condition, business, prospects, or corporate affairs of the Company as any Major Investor may from time to time reasonably request; provided, however, that the Company shall not be obligated under this Subsection 3.1 to provide information (i) that the Company reasonably determines in good faith to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in a form acceptable to the Company); (ii) that the Company reasonably determines in good faith would give rise to a conflict of interest between the Company, on the one hand, and such Major Investor, on the other hand; or (iii) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

If, for any period, the Company has any subsidiary whose accounts are consolidated with those of the Company, then in respect of such period the financial statements delivered pursuant to the foregoing sections shall be the consolidated and consolidating financial statements of the Company and all such consolidated subsidiaries.

Notwithstanding anything else in this Subsection 3.1 to the contrary, the Company may cease providing the information set forth in this Subsection 3.1 during the period starting with the date forty-five (45) days before the Company's good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; provided that the Company's covenants under this Subsection 3.1 shall be reinstated at such time as the Company is no longer actively employing its commercially reasonable efforts to cause such registration statement to become effective.

3.2 Inspection. The Company shall permit each Major Investor at such Major Investor's expense, to visit and inspect the Company's properties; examine its books of account and records; and discuss the Company's affairs, finances, and accounts with its officers, during normal business hours of the Company as may be reasonably requested by the Major Investor; provided, however, that the Company shall not be obligated pursuant to this Subsection 3.2 to provide access to any information that it reasonably and in good faith considers to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form acceptable to the Company), would give rise to a conflict of interest between the Company, on the one hand, and such Major Investor, on the other hand, or the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

3.3 Termination of Information Rights. The covenants set forth in Subsection 3.1 and Subsection 3.2 shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO, (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (iii) upon a Deemed Liquidation Event (as defined in the Company's Certificate of Incorporation), whichever event occurs first.

3.4 **Confidentiality.** Each Investor agrees that such Investor will keep confidential and will not disclose, divulge, or use for any purpose (other than to monitor its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement (including notice of the Company's intention to file a registration statement), unless such confidential information (a) is known or becomes known to the public in general (other than as a result of a breach of this Subsection 3.4 by such Investor), (b) is or has been independently developed or conceived by such Investor without use of the Company's confidential information, or (c) is or has been made known or disclosed to such Investor by a third party without a breach of any obligation of confidentiality such third party may have to the Company; provided, however, that an Investor may disclose confidential information (i) to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company; (ii) to any prospective purchaser of any Registrable Securities from such Investor, if such prospective purchaser agrees to be bound by the provisions of this Subsection 3.4; (iii) to any existing or prospective Affiliate, partner, member, stockholder, or wholly owned subsidiary of such Investor in the ordinary course of business, provided that such Investor informs such Person that such information is confidential and directs such Person to maintain the confidentiality of such information and, in the case of any such prospective Person of the type identified in this clause (iii), such prospective Person has agreed in writing to maintain the confidentiality of information received from such Investor; (iv) to the extent required in connection with any routine or periodic examination or similar process by any regulatory or self-regulatory body or authority not specifically directed at the Company or the confidential information obtained from the Company pursuant to the terms of the Agreement, including, without limitation, quarterly or annual reports or other filings required by national securities exchanges; or (v) as may otherwise be required by law, provided that, with respect to this clause (v), the Investor promptly notifies the Company of any such required disclosures and takes reasonable steps to minimize the extent of any such required disclosures, in each case with respect to any such required disclosures that are specifically targeted at the information regarding the Company.

#### 4. Rights to Future Stock Issuances.

4.1 Right of First Offer. Subject to the terms and conditions of this Subsection 4.1 and applicable securities laws, if the Company proposes to offer or sell any New Securities, the Company shall first offer such New Securities to each Major Investor. A Major Investor shall be entitled to apportion the right of first offer hereby granted to it, in such proportions as it deems appropriate, among (i) itself, (ii) its Affiliates and (iii) its beneficial interest holders, such as limited partners, members or any other Person having "beneficial ownership," as such term is defined in Rule 13d-3 promulgated under the Exchange Act, of such Major Investor ("**Investor Beneficial Owners**"); provided that each such Affiliate or Investor Beneficial Owner (x) is not a Competitor or FOIA Party, unless such party's purchase of New Securities is otherwise consented to by the Board of Directors and (y) agrees to enter into this Agreement and each of the Fourth Amended and Restated Voting Agreement (the "**Voting Agreement**") and the Fourth Amended and Restated Right of First Refusal and Co-Sale Agreement of even date herewith among the Company, the Investors and the other parties named therein, as an "**Investor**" under each such agreement.

(a) The Company shall give notice (the "**Offer Notice**") to each Major Investor, stating (i) its bona fide intention to offer such New Securities, (ii) the number of such New Securities to be offered, and (iii) the price and terms, if any, upon which it proposes to offer such New Securities.



(b) By notification to the Company within twenty (20) days after the Offer Notice is given, each Major Investor may elect to purchase or otherwise acquire, at the price and on the terms specified in the Offer Notice, up to that portion of such New Securities which equals the proportion that the Common Stock then held by such Major Investor (including all shares of Common Stock then issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held by such Major Investor) bears to the total Common Stock of the Company then held by all the Investors (including all shares of Common Stock issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held by the Investors). At the expiration of such twenty (20) day period, the Company shall promptly notify each Major Investor that elects to purchase or acquire all the shares available to it (each, a **“Fully Exercising Investor”**) of any other Major Investor’s failure to do likewise. During the ten (10) day period commencing after the Company has given such notice, each Fully Exercising Investor may, by giving notice to the Company, elect to purchase or acquire, in addition to the number of shares specified above, up to that portion of the New Securities for which Major Investors were entitled to subscribe but that were not subscribed for by the Major Investors which is equal to the proportion that the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of Preferred Stock and any other Derivative Securities then held, by such Fully Exercising Investor bears to the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held, by all Fully Exercising Investors who wish to purchase such unsubscribed shares. The closing of any sale pursuant to this Subsection 4.1(b) shall occur within the later of ninety (90) days of the date that the Offer Notice is given and the date of initial sale of New Securities pursuant to Subsection 4.1(c).

(c) If all New Securities referred to in the Offer Notice are not elected to be purchased or acquired as provided in Subsection 4.1(b), the Company may, during the ninety (90) day period following the expiration of the periods provided in Subsection 4.1(b), offer and sell the remaining unsubscribed portion of such New Securities to any Person or Persons at a price not less than, and upon terms no more favorable to the offeree than, those specified in the Offer Notice. If the Company does not enter into an agreement for the sale of the New Securities within such period, or if such agreement is not consummated within thirty (30) days of the execution thereof, the right provided hereunder shall be deemed to be revived and such New Securities shall not be offered unless first reoffered to the Major Investors in accordance with this Subsection 4.1.

(d) The right of first offer in this Subsection 4.1 shall not be applicable to (i) Exempted Securities (as defined in the Company’s Certificate of Incorporation), (ii) shares of Common Stock issued in the IPO, and (iii) the issuance of shares of Series B Preferred Stock pursuant to the Series B Purchase Agreement.

4.2 Termination. The covenants set forth in Subsection 4.1 shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO or (ii) upon a Deemed Liquidation Event (as defined in the Company’s Certificate of Incorporation), whichever event occurs first.

## 5. Additional Covenants.

5.1 Insurance. The Company has obtained from financially sound and reputable insurers Directors and Officers liability insurance in an amount and on terms and conditions satisfactory to the Board of Directors, and will use commercially reasonable efforts to cause such insurance policies to be maintained until such time as the Board of Directors determines that such insurance should be discontinued. The Directors and Officers liability insurance policy shall not be cancelable by the Company without prior approval by the Board of Directors (including all of the Preferred Directors). Notwithstanding any other provision of this Section 5.1 to the contrary, for so long as a Preferred Director is serving on the Board of Directors, the Company shall not cease to maintain a Directors and Officers liability insurance policy in an amount of at least five million dollars (\$5,000,000) unless approved by all of the Preferred Directors.

5.2 Employee Agreements. The Company will cause each person now or hereafter employed by it or by any subsidiary (or engaged by the Company or any subsidiary as a consultant/independent contractor) with access to confidential information and/or trade secrets to enter into a nondisclosure and proprietary rights assignment agreement.

5.3 Employee Stock Plan; Employee Stock. Unless otherwise approved by the Board of Directors (including a majority of the Preferred Directors), all future employees and consultants of the Company who purchase, receive options to purchase, or receive awards of shares of the Company's capital stock after the date hereof shall be required to execute restricted stock or option agreements, as applicable, providing for (a) vesting of shares over a four (4) year period, with the first twenty-five percent (25%) of such shares vesting following twelve (12) months of continued employment or service, and the remaining shares vesting in equal monthly installments over the following thirty-six (36) months and (b) a market stand-off provision substantially similar to that in Subsection 2.11. In addition, unless otherwise approved by the Board of Directors (including all of the Preferred Directors), the Company shall retain a "right of first refusal" on employee transfers until the Company's IPO and shall have the right to repurchase unvested shares at cost upon termination of employment of a holder of restricted stock.

5.4 Board Matters. Unless otherwise determined by the vote of a majority of the directors then in office, the Board of Directors shall meet at least quarterly in accordance with an agreed-upon schedule. The Company shall reimburse the nonemployee directors for all reasonable out-of-pocket travel expenses incurred (consistent with the Company's travel policy) in connection with attending meetings of the Board of Directors. Each Preferred Director shall be entitled in such person's discretion to be a member of any committee of the Board of Directors.

5.5 Successor Indemnification. If the Company or any of its successors or assignees consolidates with or merges into any other Person and is not the continuing or surviving corporation or entity of such consolidation or merger, then to the extent necessary, proper provision shall be made so that the successors and assignees of the Company assume the obligations of the Company with respect to indemnification of members of the Board of Directors as in effect immediately before such transaction, whether such obligations are contained in the Company's Bylaws, its Certificate of Incorporation, or elsewhere, as the case may be.

5.6 Indemnification Matters. The Company hereby acknowledges that one (1) or more of the directors nominated to serve on the Board of Directors by the Investors (each a “**Fund Director**”) may have certain rights to indemnification, advancement of expenses and/or insurance provided by one or more of the Investors and certain of their Affiliates (collectively, the “**Fund Indemnitors**”). The Company hereby agrees (a) that it is the indemnitor of first resort (*i.e.*, its obligations to any such Fund Director are primary and any obligation of the Fund Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by such Fund Director are secondary), (b) that it shall be required to advance the full amount of expenses incurred by such Fund Director and shall be liable for the full amount of all expenses, judgments, penalties, fines and amounts paid in settlement by or on behalf of any such Fund Director to the extent legally permitted and as required by the Company’s Certificate of Incorporation or Bylaws of the Company (or any agreement between the Company and such Fund Director), without regard to any rights such Fund Director may have against the Fund Indemnitors, and, (c) that it irrevocably waives, relinquishes and releases the Fund Indemnitors from any and all claims against the Fund Indemnitors for contribution, subrogation or any other recovery of any kind in respect thereof. The Company further agrees that no advancement or payment by the Fund Indemnitors on behalf of any such Fund Director with respect to any claim for which such Fund Director has sought indemnification from the Company shall affect the foregoing and the Fund Indemnitors shall have a right of contribution and/or be subrogated to the extent of such advancement or payment to all of the rights of recovery of such Fund Director against the Company.

5.7 Right to Conduct Activities. The Company hereby agrees and acknowledges that each of OrbiMed Private Investments, VI, L.P., Atlas Venture Fund X, L.P., Atlas Venture Fund XI, L.P., Atlas Venture Opportunity Fund I, L.P., Omega Fund VI, L.P., the Fidelity Investors, Invus Public Equities, L.P., Citadel Multi-Strategy Equities Master Fund Ltd. (“**Surveyor**”), Zone II Healthcare Holdings, LLC, Cowen Healthcare Investments II LP, CHI EF II LP, Biotechnology Value Fund, L.P., Biotechnology Value Fund II, L.P., Biotechnology Value Trading Fund OS, L.P. and Celgene (together with each of their respective Affiliates) (“**Funds**”) is a professional investment fund or makes professional investments, and as such invests in numerous portfolio companies, some of which may be deemed competitive with the Company’s business (as currently conducted or as currently propose to be conducted). The Company hereby agrees that, to the extent permitted under applicable law, such Funds shall not be liable to the Company for any claim arising out of, or based upon, (i) the investment by any of such Funds in any entity competitive with the Company, or (ii) actions taken by any partner, officer or other representative of such Funds to assist any such competitive company, whether or not such action was taken as a member of the board of directors of such competitive company or otherwise, and whether or not such action has a detrimental effect on the Company; provided, however, that the foregoing shall not relieve (x) any of such Funds from liability associated with the unauthorized disclosure of the Company’s confidential information obtained pursuant to this Agreement, or (y) any director or officer of the Company from any liability associated with his or her fiduciary duties to the Company. The Company acknowledges that the execution of this Agreement and the access to the Company’s confidential information shall in no way be construed to prohibit or restrict the Funds from maintaining, making or considering investments in other companies, or from otherwise operating in the ordinary course of business.

5.8 **CFIUS Filing Event**. If and only if (i) the Committee on Foreign Investment in the United States or any member agency thereof acting in its capacity as a member agency (“**CFIUS**”) requests or requires that the Company and an Investor to file a notice or declaration with CFIUS pursuant to the Defense Production Act of 1950, as amended, including all implementing regulations thereof (the “**DPA**”), with respect to an Investor’s investment in the Company (the “**Covered Transaction**”), or (ii) the Company or an Investor determine in good faith that a filing with CFIUS with respect to the Covered Transaction is advisable or required by applicable law, then in either case, (i) or (ii) (either to constitute a “**CFIUS Filing Event**”) the Company and such Investor shall, and shall cause any Affiliates of such Investor to, cooperate and promptly make a CFIUS filing in the requested, required or advisable form in accordance with the DPA. This Subsection 5.8 shall only be applicable to Investors who are Foreign Persons or are managed or controlled by Foreign Persons. “**Foreign Person**” means a Person or government that is a “foreign person” within the meaning of the DPA.

5.9 **Termination of Covenants**. The covenants set forth in this Section 5, except for Subsection 5.5, shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO, (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (iii) upon a Deemed Liquidation Event, whichever event occurs first.

#### 6. Miscellaneous.

6.1 **Successors and Assigns**. The rights under this Agreement may be assigned (but only with all related obligations) by a Holder to a transferee of Registrable Securities that (i) is an Affiliate of a Holder; (ii) is a Holder’s Immediate Family Member or trust for the benefit of an individual Holder or one or more of such Holder’s Immediate Family Members; or (iii) after such transfer, holds at least 1,000,000 shares of Registrable Securities (subject to appropriate adjustment for stock splits, stock dividends, combinations, and other recapitalizations) or, if less, all of the Registrable Securities held by such Holder; provided, however, that (x) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee and the Registrable Securities with respect to which such rights are being transferred; and (y) such transferee agrees in a written instrument delivered to the Company to be bound by and subject to the terms and conditions of this Agreement, including the provisions of Subsection 2.11. For the purposes of determining the number of shares of Registrable Securities held by a transferee, the holdings of a transferee (1) that is an Affiliate or stockholder of a Holder; (2) who is a Holder’s Immediate Family Member; or (3) that is a trust for the benefit of an individual Holder or such Holder’s Immediate Family Member shall be aggregated together and with those of the transferring Holder; provided further that all transferees who would not qualify individually for assignment of rights shall have a single attorney-in-fact for the purpose of exercising any rights, receiving notices, or taking any action under this Agreement. The terms and conditions of this Agreement inure to the benefit of and are binding upon the respective successors and permitted assignees of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assignees any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein.

6.2 Governing Law. This Agreement shall be governed by the internal law of the State of Delaware, without regard to any conflicts of laws principles that would require the application of laws of any other jurisdiction.

6.3 Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, *e.g.*, www.docuSign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

6.4 Titles and Subtitles. The titles and subtitles used in this Agreement are for convenience only and are not to be considered in construing or interpreting this Agreement.

6.5 Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of actual receipt or (i) personal delivery to the party to be notified; (ii) when sent, if sent by electronic mail or facsimile during the recipient's normal business hours, and if not sent during normal business hours, then on the recipient's next business day; (iii) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (iv) one (1) business day after the business day of deposit with a nationally recognized overnight courier, freight prepaid, specifying next-day delivery, with written verification of receipt. All communications shall be sent to the respective parties at their addresses as set forth on Schedule A or Schedule B (as applicable) hereto, or to the principal office of the Company and to the attention of the Chief Executive Officer, in the case of the Company, or to such email address, facsimile number, or address as subsequently modified by written notice given in accordance with this Subsection 6.5. If notice is given to the Company, a copy shall also be sent to Goodwin Procter LLP, 100 Northern Avenue, Boston, MA 02210, Attention: Richard A. Hoffman, Esq., Fax: (617) 977-9449, email: [\*\*\*]; and if notice is given to OrbiMed Private Investments VI, LP, Atlas Venture Fund X, L.P., Atlas Venture Fund XI, L.P. or Atlas Venture Opportunity Fund I, L.P., a copy shall also be given to Greenberg Traurig, P.A., 401 E. Las Olas Boulevard, Suite 2000, Fort Lauderdale, FL 33301, Attn: Mathew B. Hoffman, Fax: (954) 759-5532, email: [\*\*\*]; and if notice is given to Omega Fund VI, L.P., a copy shall also be given to Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP, 1 Marina Park Drive, Suite 900, Boston, MA 02210, Attention: Jeffrey Engerman, email: [\*\*\*].

Each Investor and Key Holder consents to the delivery of any stockholder notice pursuant to the Delaware General Corporation Law (the "DGCL"), as amended or superseded from time to time, by electronic transmission pursuant to Section 232 of the DGCL (or any successor thereto) at the electronic mail address set forth below such Investor's or Key Holder's name on the Schedules hereto, as updated from time to time by notice to the Company, or as on the books of the Company. To the extent that any notice given by means of electronic transmission is returned or undeliverable for any reason, the foregoing consent shall be deemed to have been revoked until a new or corrected electronic mail address has been provided, and such attempted electronic notice shall be ineffective and deemed to not have been given. Each Investor and Key Holder agrees to promptly notify the Company of any change in its electronic mail address, and that failure to do so shall not affect the foregoing.

6.6 Amendments and Waivers. Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of the Company and the Required Holders (as defined in the Company's Certificate of Incorporation); provided that the Company may in its sole discretion waive compliance with Subsection 2.12(c) (and the Company's failure to object promptly in writing after notification of a proposed assignment allegedly in violation of Subsection 2.12(c) shall be deemed to be a waiver); and provided further that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party. Notwithstanding the foregoing, (a) this Agreement may not be amended or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, termination, or waiver applies to all Investors in the same fashion (it being agreed that any waiver of the provisions of Section 4 shall be effective (i) only if all Investors that have rights under Section 4 are provided the opportunity to participate in such offering to the same extent (on a percentage basis) of their pro rata share and on similar terms as the other Investors who are participating in such offering or (ii) if none of the Investors elect to participate in such offering), (b) Subsection 5.7 and this clause (b) of this Subsection 6.6) may not be amended, modified, terminated or waived without the written consent of Surveyor and (c) Subsections 3.1, 3.2 and 4.1 and any other section of this Agreement applicable to the Major Investors (including this clause (c) of this Subsection 6.6) may not be amended, modified, terminated or waived without the written consent of the holders of a majority of the Registrable Securities then outstanding and held by the Major Investors. Further, Section 2 of this Agreement may not be amended, and no provision of Section 2 hereof may be waived, in each case, in any way which would adversely affect the rights of the Key Holders hereunder in a manner disproportionate to any adverse effect such amendment or waiver would have on the rights of the Investors hereunder, without also the written consent of the holders of a majority of the Registrable Securities then outstanding held by the Key Holders; provided, however, any amendment to this Agreement to grant registration rights senior or pari passu to the Investors in connection with any future issuance of securities of the Company shall not be deemed to adversely affect the rights of the Key Holders hereunder in a manner disproportionate to the Investors. The Company shall give prompt notice of any amendment or termination hereof or waiver hereunder to any party hereto that did not consent in writing to such amendment, termination, or waiver. Any amendment, termination, or waiver effected in accordance with this Subsection 6.6 shall be binding on all parties hereto, regardless of whether any such party has consented thereto. No waivers of or exceptions to any term, condition, or provision of this Agreement, in any one or more instances, shall be deemed to be or construed as a further or continuing waiver of any such term, condition, or provision.

6.7 Severability. In case any one or more of the provisions contained in this Agreement is for any reason held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and such invalid, illegal, or unenforceable provision shall be reformed and construed so that it will be valid, legal, and enforceable to the maximum extent permitted by law.

6.8 Aggregation of Stock. All shares of Registrable Securities held or acquired by Affiliates shall be aggregated together for the purpose of determining the availability of any rights under this Agreement and such Affiliated persons may apportion such rights as among themselves in any manner they deem appropriate.

6.9 Additional Investors. Notwithstanding anything to the contrary contained herein, if the Company issues additional shares of Preferred Stock after the date hereof, any purchaser of such shares of Preferred Stock may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement, and thereafter shall be deemed an "Investor" for all purposes hereunder. No action or consent by the Investors shall be required for such joinder to this Agreement by such additional Investor, so long as such additional Investor has agreed in writing to be bound by all of the obligations as an "Investor" hereunder.

6.10 Entire Agreement. This Agreement (including any Schedules and Exhibits hereto) constitutes the full and entire understanding and agreement among the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties, including the Prior Agreement, is expressly canceled.

6.11 Dispute Resolution. The parties (a) hereby irrevocably and unconditionally submit to the jurisdiction of the state courts of Delaware and to the jurisdiction of the United States District Court for the District of Delaware for the purpose of any suit, action or other proceeding arising out of or based upon this Agreement, (b) agree not to commence any suit, action or other proceeding arising out of or based upon this Agreement except in the state courts of Delaware or the United States District Court for the District of Delaware, and (c) hereby waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court.

WAIVER OF JURY TRIAL: EACH PARTY HEREBY WAIVES ITS RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF THIS AGREEMENT, THE SECURITIES OR THE SUBJECT MATTER HEREOF. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL-ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT AND THAT RELATE TO THE SUBJECT MATTER OF THIS TRANSACTION, INCLUDING, WITHOUT LIMITATION, CONTRACT CLAIMS, TORT CLAIMS (INCLUDING NEGLIGENCE), BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW AND STATUTORY CLAIMS. THIS SECTION HAS BEEN FULLY DISCUSSED BY EACH OF THE PARTIES HERETO AND THESE PROVISIONS WILL NOT BE SUBJECT TO ANY EXCEPTIONS. EACH PARTY HERETO HEREBY FURTHER WARRANTS AND REPRESENTS THAT SUCH PARTY HAS REVIEWED THIS WAIVER WITH ITS LEGAL COUNSEL, AND THAT SUCH PARTY KNOWINGLY AND VOLUNTARILY WAIVES ITS JURY TRIAL RIGHTS FOLLOWING CONSULTATION WITH LEGAL COUNSEL.

6.12 Delays or Omissions. No delay or omission to exercise any right, power, or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power, or remedy of such nonbreaching or nondefaulting party, nor shall it be construed to be a waiver of or acquiescence to any such breach or default, or to any similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. All remedies, whether under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

6.13 Publicity.

(a) The Company shall not use the name or logo of Celgene or its Affiliates, or refer to Celgene or its Affiliates, directly or indirectly, in connection with Celgene's or its Affiliates' relationship, agreements or arrangements with the Company in any advertisement, press release, professional or trade publication, or in any other manner, except (i) as may be required by law, (ii) on a confidential basis to potential financing sources, including lenders, investors, investment bankers or acquirors but only as to the fact of Celgene's equity investment in the Company and documentation relating thereto, (iii) on a confidential basis to the Company's lawyers, contractors, accountants and other advisors who have a need to have access and knowledge of such information, or (iv) with Celgene's prior written consent, which may be withheld in Celgene's sole discretion. If the Company believes public disclosure of Celgene's or its Affiliates' relationship, agreements or arrangements with the Company is required by law, the Company shall at a reasonable time before making any such disclosure, consult with Celgene regarding such disclosure, permit Celgene to review such disclosure not less than ten (10) business days prior to its proposed disclosure (unless the Company is legally obligated to make such disclosure on fewer than ten (10) business days' notice, in which case the Company shall give Celgene as much time to review such disclosure as is reasonably practicable), revise such disclosure as reasonably requested by Celgene, and if requested by Celgene, seek confidential treatment for any portion of any agreements or documents intended to be filed with the Securities and Exchange Commission or other regulatory authority as may be reasonably requested by Investor.

(b) Except as provided in Section 6.13(a) hereof, the Company may not, without the express prior approval of Celgene (which may be given or withheld in Celgene's sole discretion) issue any press release, advertisement or announcement (in whatever form) disclosing that Celgene has invested in the Company or make any other disclosure regarding Celgene or its Affiliates.

[Signature Page to Follow]



IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**COMPANY:**

**IKENA ONCOLOGY, INC.**

By: /s/ Mark Manfredi

Name: Mark Manfredi

Title: President and Chief Executive Officer

Address:

50 Northern Avenue, 7th Floor

Boston, MA 02210

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**KEY HOLDERS:**

**GEORGE GEORGIU, PH.D.**

Signature: /s/ George Georgiou

**MARYJEAN DOTIS**

Signature: /s/ Maryjean Dotis

**AKIHIRO FURUTA**

Signature: /s/ Akihiro Furuta

**SHINICHI KOIZUMI**

Signature: /s/ Shinichi Koizumi

**ATSUSHI NAGAHISA**

Signature: /s/ Atsushi Nagahisa

**TAKAKO OKUMURA**

Signature: /s/ Takako Okumura

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**KEY HOLDERS:**

**YOSHIYUKI OKUMURA**

Signature: /s/ Yoshiyuki Okumura

**ANDREW M. SAIDEL**

Signature: /s/ Andrew M. Saidel

**YUKINORI TAKE**

Signature: /s/ Yukinori Take

**MARK MANFREDI**

Signature: /s/ Mark Manfredi

**SILVIA BUONAMICI**

Signature: /s/ Silvia Buonamici

**SIMONE HAUSMANN**

Signature: /s/ Simone Hausmann

**SHANE LOFGREN**

Signature: /s/ Shane Lofgren

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**KEY HOLDERS:**

**SERENA LUNARDI**

Signature: /s/ Serena Lunardi

**PAWEL MAZUR**

Signature: /s/ Pawel Mazur

**PETER SMITH**

Signature: /s/ Peter Smith

**DOMINIC REYNOLDS**

Signature: /s/ Dominic Reynolds

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**CELGENE CORPORATION**

By: /s/ Daniel O'Connell

\_\_\_\_\_  
Name: Daniel O'Connell

Title: Authorized Signatory

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**ORBIMED PRIVATE INVESTMENTS VI, LP**

By: OrbiMed Capital GP VI LLC, its General Partner

By: OrbiMed Advisors LLC, its Managing Member

By: /s/ David Bonita

Name: David Bonita

Title: Member

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**ORBIMED GENESIS MASTER FUND, L.P.**

By: OrbiMed Genesis GP LLC, its General Partner

By: OrbiMed Advisors LLC, its Managing Member

By: /s/ C. Scotland Stevens

Name: C. Scotland Stevens

Title: Member

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**WORLDWIDE HEALTHCARE TRUST PLC**

By: OrbiMed Capital LLC, solely in its capacity as  
Portfolio Manager

By: /s/ C. Scotland Stevens

---

Name: C. Scotland Stevens

Title: Member



IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**ATLAS VENTURE FUND X, L.P.**

By: Atlas Venture Associates X, L.P., its General Partner

By: Atlas Venture Associates X, LLC, its General Partner

By: /s/ Ommer Chohan

Name: Ommer Chohan

Title: CFO

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**ATLAS VENTURE FUND XI, L.P.**

By: Atlas Venture Associates XI, L.P., its General Partner

By: Atlas Venture Associates XI, LLC, its General Partner

By: /s/ Ommer Chohan

Name: Ommer Chohan

Title: CFO

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**ATLAS VENTURE OPPORTUNITY FUND I, L.P.**

By: Atlas Venture Associates Opportunity I, L.P., its  
General Partner

By: Atlas Venture Associates Opportunity I, LLC, its  
General Partner

By: /s/ Ommer Chohan  
Name: Ommer Chohan  
Title: CFO

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**OMEGA FUND VI, L.P.**

By: Omega Fund VI GP, L.P., its General Partner

By: Omega Fund VI GP Manager, Ltd., its General Partner

By: /s/ Otello Stampacchia

Name: Otello Stampacchia

Title: Director

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**FIDELITY CAPITAL TRUST: FIDELITY FLEX  
SMALL CAP FUND – SMALL CAP GROWTH  
SUBPORTFOLIO**

By: /s/ Chris Maher

Name: Chris Maher

Title: Authorized Signatory

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**FIDELITY SECURITIES FUND:  
FIDELITY SMALL CAP GROWTH FUND**

By: /s/ Chris Maher

Name: Chris Maher

Title: Authorized Signatory

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**FIDELITY SECURITIES FUND:  
FIDELITY SMALL CAP GROWTH K6 FUND**

By: /s/ Chris Maher

Name: Chris Maher

Title: Authorized Signatory

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**FIDELITY ADVISOR SERIES VII:  
FIDELITY ADVISOR BIOTECHNOLOGY FUND**

By: /s/ Chris Maher

Name: Chris Maher

Title: Authorized Signatory

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*



IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**FIDELITY CAPITAL TRUST: FIDELITY STOCK  
SELECTOR SMALL CAP FUND**

By: /s/ Chris Maher

Name: Chris Maher

Title: Authorized Signatory

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**FIDELITY SECURITIES FUND:  
FIDELITY SERIES SMALL CAP  
OPPORTUNITIES FUND**

By: /s/ Chris Maher

Name: Chris Maher

Title: Authorized Signatory

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**FIDELITY SELECT PORTFOLIOS:  
BIOTECHNOLOGY PORTFOLIO**

By: /s/ Chris Maher

Name: Chris Maher

Title: Authorized Signatory

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**INVUS PUBLIC EQUITIES, L.P.**

By: /s/ Raymond Debbane

Name: Raymond Debbane

Title: President of its General Partner

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**HEALTHCOR THERAPEUTICS MASTER FUND, L.P.**

By: HealthCor Therapeutics GP, LLC, its General Partner

By: /s/ Anabelle Perez Gray

Name: Anabelle Perez Gray

Title: General Counsel

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**CITADEL MULTI-STRATEGY EQUITIES MASTER  
FUND LTD.**

By: Citadel Advisors, LLC, its portfolio manager

By: /s/ Shellane Mulcahy

Name: Shellane Mulcahy

Title: Authorized Signatory

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**ZONE II HEALTHCARE HOLDINGS, LLC**

By: Farallon Capital Management, L.L.C., its Manager

By: /s/ Philip Dreyfuss

Name: Philip Dreyfuss

Title: Authorized Signatory

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**COWEN HEALTHCARE INVESTMENTS II LP**

By: Cowen Healthcare Investments II GP LLC, its General Partner

By: /s/ Kevin Raidy  
Name: Kevin Raidy  
Title: Managing Partner

**CHIEF II LP**

By: Cowen Healthcare Investments II GP LLC, its General Partner

By: /s/ Kevin Raidy  
Name: Kevin Raidy  
Title: Managing Partner

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*



IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**LOGOS OPPORTUNITIES FUND II, L.P.**

By: Logos Opportunities Fund GP, LLC, its General Partner

By: /s/ Graham Walmsley

Name: Graham Walmsley

Title: Managing Member

**LOGOS OPPORTUNITIES FUND II, L.P.**

By: Logos Opportunities Fund GP, LLC, its General Partner

By: /s/ Arsani William

Name: Arsani William

Title: Managing Partner

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

**INVESTOR:**

**BIOTECHNOLOGY VALUE FUND, L.P.**

By: /s/ Mark Lampert

Name: Mark Lampert

Title: Chief Executive Officer BVF I GP LLC, itself  
General Partner of Biotechnology Value Fund,  
L.P.

**BIOTECHNOLOGY VALUE FUND II, L.P.**

By: /s/ Mark Lampert

Name: Mark Lampert

Title: Chief Executive Officer BVF II GP LLC, itself  
General Partner of Biotechnology Value Fund,  
L.P.

**BIOTECHNOLOGY VALUE TRADING FUND OS,  
L.P.**

By: /s/ Mark Lampert

Name: Mark Lampert

Title: Chief Executive Officer BVF Partners L.P., itself  
sole member of BVF Partners OS Ltd., itself GP  
of Biotechnology Value Trading Fund OS, L.P.

*[Signature Page to Fourth Amended and Restated Investors' Rights Agreement]*

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## SCHEDULE A

### Investors

Celgene Corporation  
86 Morris Avenue  
Summit, NJ 07901  
Attn: Daniel O'Connell and Andrew Fedder  
Email: [\*\*\*]; [\*\*\*]

OrbiMed Private Investments VI, LP  
Attention: General Counsel  
601 Lexington Avenue, 54th Floor  
New York, NY 10022  
Email: [\*\*\*]

Worldwide Healthcare Trust PLC  
Attention: General Counsel  
601 Lexington Avenue, 54th Floor  
New York, NY 10022  
Email: [\*\*\*]

Orbimed Genesis Master Fund, L.P.  
Attention: General Counsel  
601 Lexington Avenue, 54th Floor  
New York, NY 10022  
Email: [\*\*\*]

Atlas Venture Fund X, L.P.  
300 Technology Square, 8th Floor  
Cambridge, MA 02139  
Attn: Ommer Chohan  
Email: [\*\*\*]

Atlas Venture Fund XI, L.P.  
300 Technology Square, 8th Floor  
Cambridge, MA 02139  
Attn: Kevin Bitterman  
Email: [\*\*\*]

Atlas Venture Opportunity Fund I, L.P.  
300 Technology Square, 8th Floor  
Cambridge, MA 02139  
Attn: Ommer Chohan  
Email: [\*\*\*]

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Omega Fund VI, L.P.  
888 Boylston Street, Suite 1111  
Boston, MA 02199

Fidelity Capital Trust: Fidelity Flex Small Cap Fund – Small Cap Growth Subportfolio  
State Street Bank & Trust  
PO Box 5756  
Boston, MA 02206  
Attn: ISLANDMOORING CO FBO Fidelity Capital Trust: Fidelity Flex Small Cap Fund - Small Cap Growth Subportfolio  
Email: [\*\*\*]  
Fax Number: 617-988-9110

Fidelity Securities Fund: Fidelity Small Cap Growth Fund  
Mag & Co.  
c/o Brown Brothers Harriman & Co.  
Attn: Corporate Actions/Vault  
140 Broadway  
New York, NY 10005  
Email: [\*\*\*]

Fidelity Securities Fund: Fidelity Small Cap Growth K6 Fund  
BNY Mellon  
PO Box 392002  
Pittsburgh, PA 15230  
Email: [\*\*\*]

Fidelity Advisor Series VII: Fidelity Advisor Biotechnology Fund  
State Street Bank & Trust  
PO Box 5756  
Boston, MA 02206  
Attn: Bangle & Co fbo Fidelity Advisor Series VII: Fidelity Advisor Biotechnology Fund  
Email: [\*\*\*]  
Fax Number: 617-988-9110

Fidelity Capital Trust: Fidelity Stock Selector Small Cap Fund  
Mag & Co.  
c/o Brown Brothers Harriman & Co.  
Attn: Corporate Actions/Vault  
140 Broadway  
New York, NY 10005  
Email: [\*\*\*]  
Fidelity Securities Fund: Fidelity Series Small Cap Opportunities Fund  
Mag & Co.  
c/o Brown Brothers Harriman & Co.  
Attn: Corporate Actions/Vault  
140 Broadway  
New York, NY 10005  
Email: [\*\*\*]

---

Fidelity Select Portfolios: Biotechnology Portfolios  
Mag & Co.  
c/o Brown Brothers Harriman & Co.  
Attn: Corporate Actions/Vault  
140 Broadway  
New York, NY 10005  
Email: [\*\*\*]

Invus Public Equities, L.P.  
c/o The Invus Group, LLC  
750 Lexington Avenue  
New York, NY 10022  
Attn: Raymond Debbane  
With cc to [\*\*\*], [\*\*\*], [\*\*\*]

Citadel Multi-Strategy Equities Master Fund Ltd.  
c/o Citadel Advisors, LLC  
601 Lexington Avenue  
New York, NY 10022  
Attn: Noah Goldberg and Harry Greenbaum  
[\*\*\*]; [\*\*\*]; [\*\*\*]

With copies to:

Choate, Hall & Stewart, LLP  
Two International Place  
Boston, MA 02100  
Attention: Brian P. Lenihan and Tobin P. Sullivan  
[\*\*\*]; [\*\*\*]

Zone II Healthcare Holdings, LLC  
c/o Farallon Capital Management, L.L.C.  
One Maritime Plaza, Suite 2100  
San Francisco, CA 94111  
Attn: Philip Dreyfuss  
Email: [\*\*\*]; [\*\*\*]

---

HealthCor Therapeutics Master Fund, L.P.  
c/o HealthCor Management, L.P.  
55 Hudson Yards, 28<sup>th</sup> Floor  
New York, NY 10001  
Attn: Anabelle Perez Gray  
Email: [\*\*\*]

Cowen Healthcare Investments II LP  
c/o CHI Advisors LLC  
599 Lexington Ave., 19<sup>th</sup> Floor  
New York, NY 10022  
Attn: Kevin Raidy and Tim Anderson  
Email: [\*\*\*]; [\*\*\*]

CHI EF II LP  
c/o CHI Advisors LLC  
599 Lexington Ave., 19<sup>th</sup> Floor  
New York, NY 10022  
Attn: Kevin Raidy and Tim Anderson  
Email: [\*\*\*]; [\*\*\*]

Biotechnology Value Fund, L.P.  
c/o BVF Partners L.P.  
44 Montgomery Street, 40<sup>th</sup> Floor  
San Francisco, CA 94104  
Attn: Gorjan Hrustanovic  
Email: [\*\*\*]

Biotechnology Value Fund II, L.P.  
c/o BVF Partners L.P.  
44 Montgomery Street, 40<sup>th</sup> Floor  
San Francisco, CA 94104  
Attn: Gorjan Hrustanovic  
Email: [\*\*\*]

Biotechnology Value Trading Fund OS, L.P.  
c/o BVF Partners L.P.  
44 Montgomery Street, 40<sup>th</sup> Floor  
San Francisco, CA 94104  
Attn: Gorjan Hrustanovic  
Email: [\*\*\*]

Logos Opportunities Fund II, L.P.  
1 Letterman Drive  
Building D, Suite D3-7300  
San Francisco, CA 94129  
Attn: Virginia Yee  
Email: [\*\*\*]

## SCHEDULE B

### Key Holders

George Georgiou, Ph.D.

[\*\*\*]

[\*\*\*]

Maryjean Dotis

[\*\*\*]

[\*\*\*]

Akihiro Furuta

c/o AskAt, Inc.

4-37-2 Hirojihonmachi

Showa-ku, Nagoya, Japan, 466-0841

Shinichi Koizumi

c/o AskAt, Inc.

4-37-2 Hirojihonmachi

Showa-ku, Nagoya, Japan, 466-0841

Atsushi Nagahisa

c/o AskAt, Inc.

4-37-2 Hirojihonmachi

Showa-ku, Nagoya, Japan, 466-0841

Takako Okumura

c/o AskAt, Inc.

4-37-2 Hirojihonmachi

Showa-ku, Nagoya, Japan, 466-0841

Yoshiyuki Okumura

c/o AskAt, Inc.

4-37-2 Hirojihonmachi

Showa-ku, Nagoya, Japan, 466-0841

Andrew M. Saidel

[\*\*\*]

[\*\*\*]

Yukinori Take

c/o AskAt, Inc.

4-37-2 Hirojihonmachi

Showa-ku, Nagoya, Japan, 466-0841

---

Mark Manfredi

[\*\*\*]

[\*\*\*]

Silvia Buonamici

[\*\*\*]

[\*\*\*]

Simone Hausmann

[\*\*\*]

[\*\*\*]

Shane Lofgren

[\*\*\*]

[\*\*\*]

Serena Lunardi

[\*\*\*]

[\*\*\*]

Pawel Mazur

[\*\*\*]

[\*\*\*]

Peter Smith

[\*\*\*]

[\*\*\*]

Dominic Reynolds

[\*\*\*]

[\*\*\*]



**Subsidiaries of Ikena Oncology, Inc.**

<b><u>Name</u></b>	<b><u>Jurisdiction of Incorporation or Organization</u></b>
Arrys Therapeutics, Inc.	Delaware
Amplify Medicines, Inc.	Delaware
Ikena Oncology Securities Corporation	Massachusetts