

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

**FORM 8-K**

**CURRENT REPORT**  
Pursuant to Section 13 or 15(d)  
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): May 15, 2023

**IKENA ONCOLOGY, INC.**  
(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction  
of incorporation)

**001-40287**  
(Commission  
File Number)

**81-1697316**  
(I.R.S. Employer  
Identification No.)

**Ikena Oncology, Inc.**  
**645 Summer Street, Suite 101**  
**Boston, Massachusetts 02210**  
(Address of principal executive offices, including zip code)

**(857) 273-8343**  
(Registrant's telephone number, including area code)

**Not Applicable**  
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trade Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.001 par value per share	IKNA	The Nasdaq Global Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

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 pursuant to Section 13(a) of the Exchange Act.

**Item 1.01 Entry into a Material Definitive Agreement**

On May 15, 2023, Ikena Oncology, Inc., a Delaware corporation (the “Company”) entered into an underwriting agreement (the “Underwriting Agreement”) with Cowen and Company, LLC and William Blair & Company, L.L.C., as representatives of the underwriters listed on Schedule A thereto (collectively, the “Underwriters”), relating to an underwritten registered offering (the “Offering”) of 6,110,000 shares (the “Shares”) of the Company’s common stock, \$0.001 par value per share (the “Common Stock”), at a price of \$6.550 per share, less underwriting discounts and commissions. The Offering is being made pursuant to the Company’s shelf registration statement on Form S-3 (File No. 333-264517) (the “Registration Statement”), including a base prospectus that was declared effective by the Securities and Exchange Commission (the “SEC”) on May 5, 2022, as supplemented by a prospectus supplement dated May 15, 2023 (the “Prospectus Supplement”) that was filed with the SEC on May 15, 2023.

The Company estimates gross proceeds from the Offering, before deducting the underwriting discounts and commissions and other estimated offering expenses payable by the Company, will be approximately \$40,020,500 million. The Offering is expected to close on May 17, 2023, subject to the satisfaction of customary closing conditions. The Company currently expects to use the net proceeds from the Offering to further ongoing clinical development of their targeted oncology programs and advance them to clinical data read outs beyond the initial data for the monotherapy portion of the ongoing IK-930 Phase 1 clinical trial in the fourth quarter of 2023 and initial clinical data for IK-595, in addition to working capital, capital expenditures and other general corporate purposes.

TD Cowen acted as lead book-runner and William Blair & Company, L.L.C. acted as joint book-running manager, and H.C. Wainwright & Co. acted as lead manager for the Offering.

The Company made customary representations, warranties and covenants concerning the Company and the Registration Statement in the Underwriting Agreement and also agreed to indemnify the Underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended (the “Securities Act”). In addition, subject to certain exceptions, the Company, its officers and directors and certain other holders of the Company’s Common Stock have agreed not to offer, sell, transfer or otherwise dispose of any shares of Common Stock during the 90-day period following the date of the Prospectus Supplement.

The foregoing description of certain terms of the Underwriting Agreement and the transactions contemplated thereby does not purport to be complete and is subject to, and qualified in its entirety by, the full text of the Underwriting Agreement, which is attached as Exhibit 1.1 to this Current Report on Form 8-K and is incorporated herein by reference. The legal opinion of Goodwin Procter LLP relating to the legality of the issuance and sale of the Shares is filed as Exhibit 5.1 to this Current Report on Form 8-K.

**Item 7.01 Regulation FD Disclosure.**

On May 15, 2023, the Company issued a press release announcing its financial results for the quarter ended March 31, 2023. The Company also updated its corporate presentation. A copy of the press release and the updated corporate presentation are attached as Exhibits 99.1 and 99.2 to this Current Report on Form 8-K. The corporate presentation will also be available in the investor relations section of the Company’s website at <https://www.ikenaoncology.com/>.

The information in this Current Report on Form 8-K (including Exhibits 99.1 and 99.2) shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act or the Exchange Act, except as expressly set forth by specific reference in such filing.

**Item 8.01 Other Events**

On May 15, 2023, the Company issued a press release announcing the pricing of the Offering and its entry into the Underwriting Agreement. A copy of the press release is attached to this Current Report on Form 8-K as Exhibit 99.3 and is incorporated herein by reference.

*Cash Runway Extension*

On May 15, 2023, the Company announced that it anticipates that its existing cash and cash equivalents, including the expected gross proceeds from the Offering, will enable it to fund its operations into 2026. The Company has based this estimate on assumptions that may prove to be wrong, and it could use its capital resources sooner than it currently expects.

**Cautionary Note Regarding Forward Looking Statements**

This Current Report on Form 8-K and certain of the materials filed herewith contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, without limitation, statements regarding the Offering. The words “may,” “might,” “will,” “could,” “would,” “should,” “expect,” “plan,” “anticipate,” “intend,” “believe,” “expect,” “estimate,” “seek,” “predict,” “future,” “project,” “potential,” “continue,” “target” and similar words or expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Any forward-looking statements, such as those related to the anticipated closing of the Offering, the anticipated gross proceeds from the Offering, the Company’s intended use of proceeds from the Offering and the Company’s expectations regarding its cash runway, are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this Current Report on Form 8-K or the materials furnished or filed herewith, including, without limitation, uncertainties related to market conditions and the completion of the Offering on the anticipated terms or at all. These and other risks and uncertainties are described in greater detail in the section entitled “Risk Factors” in the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2023, as well as any subsequent filings with the SEC. In addition, any forward-looking statements represent the Company’s views only as of today and should not be relied upon as representing its views as of any subsequent date. The Company explicitly disclaims any obligation to update any forward-looking statements, except as required by law. No representations or warranties (expressed or implied) are made about the accuracy of any such forward-looking statements.

**Item 9.01 Financial Statements and Exhibits**

(d) Exhibits

Exhibit No.	Description
1.1	<a href="#">Underwriting Agreement, dated May 15, 2023, by and between Ikena Oncology, Inc. and Cowen and Company, LLC, as representative of the several underwriters named therein.</a>
5.1	<a href="#">Opinion of Goodwin Procter LLP</a>
23.1	<a href="#">Consent of Goodwin Procter LLP (included in its opinion filed as Exhibit 5.1)</a>
99.1	<a href="#">Press release issued by Ikena Oncology, Inc. on May 15, 2023</a>
99.2	<a href="#">Ikena Oncology Inc. Corporate Presentation</a>
99.3	<a href="#">Press release issued by Ikena Oncology, Inc. on May 15, 2023</a>
104	Cover Page Interactive Data File

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**SIGNATURE**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: May 15, 2023

Ikena Oncology, Inc.

By: /s/ Mark Manfredi  
Mark Manfredi, Ph.D.  
President and Chief Executive Officer

## IKENA ONCOLOGY, INC.

6,110,000 SHARES OF COMMON STOCK, \$0.001 PAR VALUE PER SHAREUNDERWRITING AGREEMENT

May 15, 2023

COWEN AND COMPANY, LLC  
WILLIAM BLAIR & COMPANY, L.L.C.  
As Representatives of the several Underwriters

c/o Cowen and Company, LLC  
599 Lexington Avenue  
New York, New York 10022

c/o William Blair & Company, L.L.C.  
150 North Riverside Plaza  
Chicago, Illinois 60606

Dear Sirs:

1. **INTRODUCTORY.** Ikena Oncology, Inc., a *Delaware* corporation (the "**Company**"), proposes to sell, pursuant to the terms of this agreement (the "**Agreement**"), to the several underwriters named in Schedule A hereto (the "**Underwriters**," or, each, an "**Underwriter**"), an aggregate of 6,110,000 shares of Common Stock, \$0.001 par value per share (the "**Common Stock**"), of the Company (the "**Stock**"). Cowen and Company, LLC ("**Cowen**") and William Blair & Company, L.L.C. ("**William Blair**") are acting as representatives of the several Underwriters and in such capacity are hereinafter referred to as the "**Representatives**."

2. **REPRESENTATIONS AND WARRANTIES OF THE COMPANY**

(i) **REPRESENTATIONS AND WARRANTIES OF THE COMPANY.** The Company represents and warrants to the several Underwriters, as of the date hereof and as of the Closing Date (as defined below), and agrees with the several Underwriters, that:

(a) **Registration Statement.** A registration statement of the Company on Form S-3 (File No. 333-264517) (including all amendments thereto, the "**Initial Registration Statement**") in respect of the Stock has been filed with the Securities and Exchange Commission (the "**Commission**") pursuant to Rule 415 under the Securities Act of 1933, as amended (the "**Securities Act**"). The Company meets the requirements for use of Form S-3 under the Securities Act, and the rules and regulations of the Commission thereunder (the "**Rules and Regulations**"). The Initial Registration Statement and any post-effective amendment thereto, each in the form heretofore delivered to you, and, excluding exhibits thereto, to you for each of the other Underwriters, have been declared effective by the Commission in such form and meet the requirements of the Securities Act, and the Rules and Regulations. The proposed offering of the Stock may be made pursuant to General Instruction I.B.1 of Form S-3. Other than (i) the Initial Registration Statement, (ii) a registration statement, if any, increasing the size of the offering filed pursuant to Rule

462(b) under the Securities Act and the Rules and Regulations (a "**Rule 462(b) Registration Statement**"), (iii) the Pricing Prospectus (as defined below), (iv) the Prospectus (as defined below) contemplated by this Agreement to be filed pursuant to Rule 424(b) of the Rules and Regulations in accordance with Section 4(i)(a) hereof and (v) any Issuer Free Writing Prospectus (as defined below), no other document with respect to the offer or sale of the Stock has heretofore been filed with the Commission. No stop order suspending the effectiveness of the Initial Registration Statement, any post-effective amendment thereto or the Rule 462(b) Registration Statement, if any, has been issued and no proceeding for that purpose or pursuant to Section 8A of the Securities Act has been initiated or threatened by the Commission. The Initial Registration Statement including all exhibits thereto and including the information contained in the Prospectus filed with the Commission pursuant to Rule 424(b) of the Rules and Regulations and deemed by virtue of Rule 430A, 430B or 430C under the Securities Act to be part of the Initial Registration Statement at the time it became effective is hereinafter collectively called the "**Registration Statement**." If the Company has filed a Rule 462(b) Registration Statement, then any reference herein to the term "Registration Statement" shall be deemed to include such Rule 462 Registration Statement. The base prospectus included in the Initial Registration Statement at the time of effectiveness thereof, as supplemented by the prospectus supplement relating to the offer and sale of the Stock, in the form filed pursuant to and within the time limits described in Rule 424(b) under the Rules and Regulations, is hereinafter called the "**Prospectus**."

Any reference herein to the Registration Statement, Pricing Prospectus or the Prospectus shall be deemed to refer to and include the documents incorporated by reference therein. Any reference to any amendment or supplement to the Prospectus shall be deemed to refer to and include any documents filed after the date of such Prospectus under the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), and incorporated by reference in such Prospectus. Any reference to (i) the Registration Statement shall be deemed to refer to and include the annual report of the last completed fiscal year of the Company on Form 10-K filed under Section 13(a) or 15(d) of the Exchange Act prior to the date hereof and (ii) the effective date of such Registration Statement shall be deemed to refer to and include the date such Registration Statement became effective and, if later, the date such Form 10-K was so filed. Any reference to any amendment to the Registration Statement shall be deemed to refer to and include any annual report of the Company filed pursuant to Section 13(a) or 15(d) of the Exchange Act after the date of this Agreement that is incorporated by reference in the Registration Statement.

(b) **General Disclosure Package.** As of the Applicable Time (as defined below) and as of the Closing Date, as the case may be, neither (i) the General Use Free Writing Prospectus(es) (as defined below) issued at or prior to the Applicable Time and the Pricing Prospectus (as defined below), all considered together (collectively, the "**General Disclosure Package**"), (ii) any individual Limited Use Free Writing Prospectus (as defined below), (iii) the bona fide electronic roadshow (as defined in Rule 433(h)(5) of the Rules and Regulations); nor (iv) any individual Written Testing-the-Waters Communication, when considered together with the General Disclosure Package, included or will include any untrue statement of a material fact or omitted or will omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; *provided, however,* that the Company makes no representations or warranties as to information contained in or omitted from the Pricing Prospectus or any Issuer Free Writing Prospectus (as defined below), in reliance upon, and in conformity with, written information furnished to the Company through the Representatives by or on behalf of any Underwriters specifically for inclusion therein, which information the parties hereto agree is limited to the Underwriter's Information (as defined in Section 18). As used in this paragraph (b) and elsewhere in this Agreement:

“**Applicable Time**” means 7:14 A.M., New York time, on the date of this Agreement or such other time as agreed to by the Company and the Representatives.

“**Issuer Free Writing Prospectus**” means any “issuer free writing prospectus,” as defined in Rule 433 of the Rules and Regulations relating to the Stock in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g) of the Rules and Regulations.

“**General Use Free Writing Prospectus**” means any Issuer Free Writing Prospectus that is identified on Schedule B to this Agreement.

“**Limited Use Free Writing Prospectuses**” means any Issuer Free Writing Prospectus that is not a General Use Free Writing Prospectus.

“**Pricing Prospectus**” means the prospectus contained in the Registration Statement immediately prior to the Applicable Time, including any document incorporated by reference therein, as supplemented by the other documents and pricing information set forth in Schedule C.

“**Principal Market**” means the Nasdaq Global Market (“*Nasdaq*”) or such other national securities exchange on which the Common Stock, including any Stock, is then listed.

“**Written Testing-the-Waters Communication**” means any Testing-the-Waters Communication (as defined below) that is a written communication within the meaning of Rule 405 of the Rules and Regulations.

“**Testing-the-Waters Communication**” means any oral or written communication with potential investors undertaken in reliance on Section 5(d) or 163B of the Securities Act.

(c) No Stop Orders; No Material Misstatements. No order preventing or suspending the use of any Issuer Free Writing Prospectus or the Prospectus relating to the proposed offering of the Stock has been issued by the Commission, and no proceeding for that purpose or pursuant to Section 8A of the Securities Act has been instituted or threatened by the Commission, and each Preliminary Prospectus, at the time of filing thereof, conformed in all material respects to the requirements of the Securities Act and the Rules and Regulations, and did not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(d) Registration Statement and Prospectus Contents. At the respective times, the Registration Statement and any amendments thereto became or become effective as to the Underwriters and at the Closing Date, the Registration Statement and any amendments thereto conformed and will conform in all material respects to the requirements of the Securities Act and the Rules and Regulations and did not and will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading; and the Prospectus and any amendments or supplements thereto, at the time the Prospectus or any amendment or

supplement thereto was issued and at the Closing Date, conformed and will conform in all material respects to the requirements of the Securities Act and the Rules and Regulations and did not and will not contain an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading; *provided, however*, that the foregoing representations and warranties in this paragraph (d) shall not apply to information contained in or omitted from the Registration Statement, the Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, in reliance upon, and in conformity with, written information furnished to the Company through the Representatives by or on behalf of any Underwriters specifically for inclusion therein, which information the parties hereto agree is limited to the Underwriter's Information.

(e) Ineligible Issuer Status. The Company is not an "ineligible issuer" in connection with the offering of the Stock pursuant to Rules 164, 405 and 433 under the Securities Act. Any Issuer Free Writing Prospectus that the Company is required to file pursuant to Rule 433(d) under the Securities Act has been, or will be, filed with the Commission in accordance with the requirements of the Securities Act. Each Issuer Free Writing Prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act or that was prepared by or on behalf of or used or referred to by the Company complies or will comply in all material respects with the requirements of Rule 433 under the Securities Act including timely filing with the Commission or retention where required and legending, and each such Issuer Free Writing Prospectus, as of its issue date and at all subsequent times through the completion of the issuance and sale of the Stock did not, does not and will not include any information that conflicted, conflicts with or will conflict with the information contained in the Registration Statement, the Pricing Prospectus or the Prospectus, including any document incorporated by reference therein. Except for the Issuer Free Writing Prospectuses, if any, and electronic road shows, if any, furnished to you before first use, the Company has not prepared, used or referred to, and will not, without your prior consent, prepare, use or refer to, any Issuer Free Writing Prospectus.

(f) Documents Incorporated by Reference. The documents incorporated or deemed to be incorporated by reference in the Registration Statement, the Pricing Prospectus and the Prospectus, at the time they were filed with the Commission, complied in all material respects with the requirements of the Exchange Act, as applicable, and, when read together with the other information in the Prospectus, do not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

(g) Exchange Act Compliance. The documents incorporated or deemed to be incorporated by reference in the Prospectus, at the time they were or hereafter are filed with the Commission, and any Issuer Free Writing Prospectus or amendment or supplement thereto complied and will comply in all material respects with the requirements of the Exchange Act, and, when read together with the other information in the Prospectus, at the time the Registration Statement and any amendments thereto become effective and the Applicable Time, as the case may be, will not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.



(h) Statistical and Market-Related Data. All statistical, demographic and market-related data included in the Registration Statement, Pricing Prospectus or the Prospectus are based on or derived from sources that the Company believes, after reasonable inquiry, to be reliable and accurate. To the extent required, the Company has obtained the written consent to the use of such data from such sources.

(i) Disclosure Controls and Procedures; Deficiencies in or Changes to Internal Control Over Financial Reporting. The Company has established and maintains disclosure controls and procedures (as defined in Rules 13a-15 and 15d-15 under the Exchange Act), which (i) are designed to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to the Company's principal executive officer and its principal financial officer by others within those entities, particularly during the periods in which the periodic reports required under the Exchange Act are being prepared, it being understood that neither this subsection (i) or this subsection (r) requires the Company to comply with Section 404 of the Sarbanes Oxley Act of 2002 as of an earlier date than it would otherwise be required to so comply under applicable law; (ii) have been evaluated by management of the Company for effectiveness as of the end of the Company's most recent fiscal quarter; and (iii) are effective in all material respects to perform the functions for which they were established. Since the end of the Company's most recent audited fiscal year, there have been no significant deficiencies or material weakness in the Company's internal control over financial reporting (whether or not remediated) and no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company is not aware of any change in its internal control over financial reporting that has occurred during its most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

(j) This Agreement. This Agreement has been duly authorized, executed and delivered by the Company.

(k) Authorization of the Stock. The Stock to be issued and sold has been duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered by the Company against payment therefor pursuant to this Agreement, will be validly issued, fully paid and nonassessable, and the issuance and sale of the Stock is not subject to any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase the Stock.

(l) No Applicable Registration or Other Similar Rights. There are no persons with registration or other similar rights to have any equity or debt securities registered for sale under the Registration Statement or included in the offering contemplated by this Agreement, except for such rights as have been duly waived.

(m) No Material Adverse Change. Except as otherwise disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus, subsequent to the respective dates as of which information is given in the Registration Statement, the Pricing Prospectus and the Prospectus: (i) there has been no material adverse change, or any development that could be expected to result in a material adverse change, in the condition, financial or otherwise, or in (A) the earnings, stockholders' equity, business, properties, operations, operating results, assets, liabilities or prospects, whether or not arising from transactions in the ordinary course of business, of the Company and its subsidiaries, considered as one entity or (B) the ability of the Company to consummate the transactions contemplated by this

Agreement or perform its obligations hereunder (any such change being referred to herein as a “**Material Adverse Change**”); (ii) the Company and its subsidiaries, considered as one entity, have not incurred any material liability or obligation, indirect, direct or contingent, including without limitation any losses or interference with their business from fire, explosion, flood, earthquakes, accident or other calamity, whether or not covered by insurance, or from any strike, labor dispute or court or governmental action, order or decree, that are material, individually or in the aggregate, to the Company and its subsidiaries, considered as one entity, and have not entered into any transactions not in the ordinary course of business; and (iii) there has not been any material decrease in the capital stock or any material increase in any short-term or long-term indebtedness of the Company or its subsidiaries and there has been no dividend or distribution of any kind declared, paid or made by the Company or, except for dividends paid to the Company or other subsidiaries, by any of the Company’s subsidiaries on any class of capital stock, or any repurchase or redemption by the Company or any of its subsidiaries of any class of capital stock.

(n) Independent Accountants. To the knowledge of the Company, Ernst & Young LLP, which has expressed its opinion with respect to the financial statements (which term as used in this Agreement includes the related notes thereto) filed with the Commission as a part of the Registration Statement, the Pricing Prospectus and the Prospectus, is (i) an independent registered public accounting firm as required by the Securities Act, the Exchange Act, and the rules of the Public Company Accounting Oversight Board (“**PCAOB**”), (ii) in compliance with the applicable requirements relating to the qualification of accountants under Rule 2-01 of Regulation S-X under the Securities Act and (iii) a registered public accounting firm as defined by the PCAOB whose registration has not been suspended or revoked and who has not requested such registration to be withdrawn.

(o) Financial Statements. The financial statements filed with the Commission as a part of the Registration Statement, the Pricing Prospectus and the Prospectus present fairly in all material respects the consolidated financial position of the Company and its subsidiaries as of the dates indicated and the results of their operations, changes in stockholders’ equity and cash flows for the periods specified. Such financial statements have been prepared in conformity with U.S. generally accepted accounting principles applied on a consistent basis throughout the periods involved, except as may be expressly stated in the related notes thereto and except in the case of unaudited financial statements, which are subject to normal and recurring year-end adjustments and do not contain certain footnotes as permitted by the applicable rules of the Commission. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission’s rules and guidelines applicable thereto. No other financial statements or supporting schedules are required to be included in the Registration Statement, the Pricing Prospectus or the Prospectus. To the Company’s knowledge, no person who has been suspended or barred from being associated with a registered public accounting firm, or who has failed to comply with any sanction pursuant to Rule 5300 promulgated by the PCAOB, has participated in or otherwise aided the preparation of, or audited, the financial statements, supporting schedules or other financial data filed with the Commission as a part of the Registration Statement, the Pricing Prospectus and the Prospectus.

(p) Company's Accounting System. The Company and each of its subsidiaries make and keep books and records that are accurate in all material respects and maintain a system of internal accounting controls designed to provide reasonable assurance that: (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with U.S. generally accepted accounting principles and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences; and (v) the interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement, the Pricing Prospectus and the Prospectus fairly presents the information called for in all material respects and is prepared in accordance with the Commission's rules and guidelines applicable thereto.

(q) Incorporation and Good Standing of the Company. The Company has been duly incorporated and is validly existing as a corporation in good standing under the laws of the jurisdiction of its incorporation and has the corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the Pricing Prospectus and the Prospectus and to enter into and perform its obligations under this Agreement. The Company is duly qualified as a foreign corporation to transact business and is in good standing in the Commonwealth of Massachusetts and each other jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify or to be in good standing would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change.

(r) Subsidiaries. Each of the Company's "subsidiaries" (for purposes of this Agreement, as defined in Rule 405 under the Securities Act) has been duly incorporated or organized, as the case may be, and is validly existing as a corporation, partnership or limited liability company, as applicable, in good standing under the laws of the jurisdiction of its incorporation or organization and has the power and authority (corporate or other) to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the Pricing Prospectus and the Prospectus. Each of the Company's subsidiaries is duly qualified as a foreign corporation, partnership or limited liability company, as applicable, to transact business and is in good standing in each jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business. All of the issued and outstanding capital stock or other equity or ownership interests of each of the Company's subsidiaries have been duly authorized and validly issued, are fully paid and nonassessable and are owned by the Company, directly or through subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance, charge or adverse claim. None of the outstanding capital stock or equity interest in any subsidiary was issued in violation of preemptive or similar rights of any security holder of such subsidiary. The constitutive or organizational documents of each of the subsidiaries comply in all material respects with the requirements of applicable laws of its jurisdiction of incorporation or organization and are in full force and effect. The Company does not own or control, directly or indirectly, any corporation, partnership, limited liability company, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Company's most recently filed Annual Report on Form 10-K.

(s) **Capitalization and Other Capital Stock Matters.** Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement, the Pricing Prospectus and the Prospectus there has not been any change in the capital stock of the Company (other than for subsequent issuances, if any, pursuant to employee benefit plans, or upon the exercise of outstanding options or warrants, in each case described in the Registration Statement, the Pricing Prospectus and the Prospectus). The Common Stock (including the Stock) conforms in all material respects to the description thereof contained in the Prospectus. All of the issued and outstanding Common Stock has been duly authorized and validly issued, are fully paid and nonassessable and have been issued in compliance with all applicable federal and state securities laws. None of the outstanding Common Stock was issued in violation of any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company. There are no authorized or outstanding options, warrants, preemptive rights, rights of first refusal or other rights to purchase, or equity or debt securities convertible into or exchangeable or exercisable for, any capital stock of the Company or any of its subsidiaries other than those described in the Registration Statement, the Pricing Prospectus and the Prospectus. The descriptions of the Company's stock option, stock bonus and other stock plans or arrangements, and the options or other rights granted thereunder, set forth in the Registration Statement, the Pricing Prospectus and the Prospectus accurately and fairly presents in all material respects the information required to be shown with respect to such plans, arrangements, options and rights.

(t) **Stock Exchange Listing.** The Common Stock is registered pursuant to Section 12(b) or 12(g) of the Exchange Act and is listed on the Principal Market, and the Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from the Principal market, nor has the Company received any notification that the Commission or the Principal Market is contemplating terminating such registration or listing. To the Company's knowledge, it is in compliance with all applicable listing requirements of the Principal Market.

(u) **Non-Contravention of Existing Instruments; No Further Authorizations or Approvals Required.** Neither the Company nor any of its subsidiaries is in violation of its charter or by laws or similar organizational documents, as applicable, or is in default (or, with the giving of notice or lapse of time, would be in default) ("**Default**") under any indenture, loan, credit agreement, note, lease, license agreement, contract, franchise or other instrument (including, without limitation, any pledge agreement, security agreement, mortgage or other instrument or agreement evidencing, guaranteeing, securing or relating to indebtedness) to which the Company or any of its subsidiaries is a party or by which it or any of them may be bound, or to which any of their respective properties or assets are subject (each, an "**Existing Instrument**"), except for such Defaults as would not be reasonably expected, individually or in the aggregate, to result in a Material Adverse Change. The Company's execution, delivery and performance of this Agreement, consummation of the transactions contemplated hereby and by the Registration Statement, the Pricing Prospectus and the Prospectus and the issuance and sale of the Stock (including the use of proceeds from the sale of the Stock as described in the Registration Statement, the Pricing Prospectus and the Prospectus under the caption "Use of Proceeds") (i) have been duly authorized by all necessary corporate action and will not result in any violation of the provisions of the charter or by laws or similar organizational documents, as applicable, of the Company or any subsidiary (ii) will not conflict with or constitute a breach of, or Default or a Debt Repayment Triggering Event (as defined below) under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company or any of its subsidiaries pursuant to, or require the consent of any other party to, any Existing Instrument and (iii) will not result in any violation of any law, administrative regulation or administrative or court decree applicable to the Company or any of its subsidiaries. No consent, approval, authorization or other order of, or

registration or filing with, any court or other governmental or regulatory authority or agency, is required for the Company's execution, delivery and performance of this Agreement and consummation of the transactions contemplated hereby and by the Registration Statement, the Pricing Prospectus and the Prospectus, except such as have been obtained or made by the Company and are in full force and effect under the Securities Act and such as may be required under applicable state securities or blue sky laws or the Financial Industry Regulatory Authority, Inc. ("**FINRA**"). As used herein, a "**Debt Repayment Triggering Event**" means any event or condition which gives, or with the giving of notice or lapse of time would give, the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its subsidiaries.

(v) No Material Actions or Proceedings. Except as otherwise disclosed in the Prospectus, there is no action, suit, proceeding, inquiry or investigation brought by or before any legal or governmental entity now pending or, to the knowledge of the Company, threatened, against or affecting the Company or any of its subsidiaries, which could be expected, individually or in the aggregate, to result in a Material Adverse Change. No material labor dispute with the employees of the Company or any of its subsidiaries, or with employees of any principal supplier, manufacturer, customer or contractor of the Company, exists or, to the knowledge of the Company, is threatened or imminent.

(w) Intellectual Property Rights. Except as otherwise disclosed in the Registration Statement, the Pricing Prospectus or the Prospectus, the Company and its subsidiaries own, or have obtained valid and enforceable licenses for, the inventions, patent applications, patents, trademarks, trade names, service names, copyrights, trade secrets and other intellectual property described in the Registration Statement, the Pricing Prospectus and the Prospectus as being owned or licensed by them or which are necessary for the conduct of their respective businesses as currently conducted or as currently proposed to be conducted as described in the Registration Statement, the Pricing Prospectus and the Prospectus (collectively, "**Intellectual Property**"), and to the Company's knowledge the conduct of their respective businesses does not and will not infringe, misappropriate or otherwise conflict in any material respect with any such rights of others. The Intellectual Property has not been adjudged by a court of competent jurisdiction to be invalid or unenforceable, in whole or in part, and the Company is unaware of any facts which would form a reasonable basis for any such adjudication. To the Company's knowledge: (i) except as disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus, there are no third parties who have rights to any Intellectual Property, including liens, security interests or other encumbrances, except for customary reversionary rights of third-party licensors with respect to Intellectual Property that is disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus as licensed to the Company or one or more of its subsidiaries; and (ii) there is no infringement by third parties of any Intellectual Property. There is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others: (A) challenging the Company's rights in or to any Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; (B) challenging the validity, enforceability or scope of any Intellectual Property, including interferences, oppositions, reexaminations, or similar government proceedings, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; or (C) asserting that the Company or any of its subsidiaries infringes, misappropriates or otherwise violates, or would, upon the commercialization of any product or service described in the Registration Statement, the Pricing Prospectus or the Prospectus as under

development, infringe, misappropriate or violate, any patent, trademark, trade name, service name, copyright, trade secret or other proprietary rights of others, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim. The Company and its subsidiaries have complied with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company or any subsidiary, and all such agreements are in full force and effect. To the Company's knowledge, there are no material defects in any of the patents or patent applications included in the Intellectual Property. The Company and its subsidiaries have taken commercially reasonable steps to protect, maintain and safeguard their Intellectual Property, including the execution of appropriate nondisclosure, confidentiality agreements and invention assignment agreements and invention assignments with their employees, and to the Company's knowledge no employee of the Company is in or has been in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement, or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee's employment with the Company. The duty of candor and good faith as required by the United States Patent and Trademark Office during the prosecution of the United States patents and patent applications included in the Intellectual Property have been complied with; and in all foreign offices having similar requirements, all such requirements have been complied with. None of the Company owned Intellectual Property or technology (including information technology and outsourced arrangements) employed by the Company or its subsidiaries has been obtained or is being used by the Company or its subsidiary in violation of any contractual obligation binding on the Company or its subsidiaries or any of their respective officers, directors or employees or otherwise in violation of the rights of any persons. The product candidates described in the Registration Statement, the Pricing Prospectus and the Prospectus as under development by the Company or any subsidiary fall within the scope of the claims of one or more patents or patent applications owned by, or exclusively licensed to, the Company or any subsidiary.

(x) All Necessary Permits, etc. Except as otherwise disclosed in the Prospectus, the Company and its subsidiaries possess such valid and current licenses, certificates, authorizations, approvals, consents or permits required by state, federal or foreign regulatory agencies or bodies to conduct their respective businesses as currently conducted and as described in the Registration Statement, the Pricing Prospectus or the Prospectus ("**Permits**"), except where the failure to possess or obtain the same or so qualify would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Change. Neither the Company nor any of its subsidiaries is in violation of, or in default under, any of the Permits or has received any notice of proceedings relating to the revocation or material modification of, or non-compliance with, any of the Permits, except for any such violations, defaults, or proceedings relating to the revocation or modification of, or non-compliance with, any such Permits that would not reasonably be expected, individually or in the aggregate, if the subject of an unfavorable decision, ruling or finding, to have a Material Adverse Change.

(y) Title to Properties. Except as otherwise disclosed in the Prospectus, the Company and its subsidiaries have good and marketable title to all of the real and personal property and other assets reflected as owned in the financial statements referred to in Section 2(o) above (or elsewhere in the Registration Statement, the Pricing Prospectus or the Prospectus), in each case free and clear of any security interests, mortgages, liens, encumbrances, equities, adverse claims and other defects, except such as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Change. The real property, improvements, equipment and personal property held under lease by the Company or any of its subsidiaries are held under valid and enforceable leases, with such exceptions as are not material and do not materially interfere with the use made or proposed to be made of such real property, improvements, equipment or personal property by the Company or such subsidiary.

(z) Tax Law Compliance. The Company and its subsidiaries have filed all necessary United States federal, state and non-U.S. income and other tax returns or have properly requested extensions thereof and have paid all taxes required to be paid by any of them and, if due and payable, any related or similar assessment, fine or penalty levied against any of them, except as may be being contested in good faith and by appropriate proceedings. The Company has made adequate charges, accruals and reserves in the applicable financial statements referred to in Section 2(o) above in respect of all federal, state and non-U.S. income and other taxes for all periods as to which the tax liability of the Company or any of its subsidiaries has not been finally determined.

(aa) Company Not an "Investment Company." The Company is not, and will not be, either after receipt of payment for the Stock or after the application of the proceeds therefrom as described under "Use of Proceeds" in the Registration Statement, the Pricing Prospectus or the Prospectus, required to register as an "investment company" under the Investment Company Act of 1940, as amended (the "**Investment Company Act**").

(bb) Insurance. Except as otherwise disclosed in the Pricing Prospectus and the Prospectus, each of the Company and its subsidiaries are insured by recognized, financially sound and reputable institutions with policies in such amounts and with such deductibles and covering such risks as the Company reasonably believes are generally deemed adequate and customary for their businesses including, but not limited to, policies covering real and personal property owned or leased by the Company and its subsidiaries against theft, damage, destruction, acts of vandalism and earthquakes and policies covering the Company and its subsidiaries for product liability claims and clinical trial liability claims. The Company has no reason to believe that it or any of its subsidiaries will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not reasonably be expected to result in a Material Adverse Change. Neither the Company nor any of its subsidiaries has been denied any insurance coverage which it has sought or for which it has applied.

(cc) No Price Stabilization or Manipulation; Compliance with Regulation M. Neither the Company nor any of its subsidiaries has taken, directly or indirectly, without giving effect to activities by the Agent, any action designed to or that might reasonably be expected to cause or result in stabilization or manipulation of the price of the Common Stock or of any "reference security" (as defined in Rule 100 of Regulation M under the Exchange Act ("**Regulation M**")) with respect to the Common Stock, whether to facilitate the sale or resale of the Stock or otherwise, and has taken no action which would directly or indirectly violate Regulation M.

(dd) Related Party Transactions. There are no business relationships or related-party transactions involving the Company or any of its subsidiaries or any other person required to be described in the Registration Statement, the Pricing Prospectus or the Prospectus that have not been described as required.

(ee) FINRA Matters. All of the information provided to the Agent or to counsel for the Agent by the Company, its counsel, its officers and directors and the holders of any securities (debt or equity) or options to acquire any securities of the Company in connection with the offering of the Stock is true, complete, correct and compliant with FINRA's rules and any letters, filings or other supplemental information provided to FINRA pursuant to FINRA Rules or NASD Conduct Rules is true, complete and correct.

(ff) No Unlawful Contributions or Other Payments. Neither the Company nor any of its subsidiaries nor, to the best of the Company's knowledge, any employee or agent of the Company or any subsidiary, has made any contribution or other payment to any official of, or candidate for, any federal, state or foreign office in violation of any applicable law or of the character required to be disclosed in the Registration Statement, the Pricing Prospectus or the Prospectus.

(gg) Compliance with Environmental Laws. Except as described in the Registration Statement, the Pricing Prospectus and the Prospectus and except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change: (i) neither the Company nor any of its subsidiaries is in violation of any federal, state, local or foreign statute, law, rule, regulation, ordinance, code, policy or rule of common law or any judicial or administrative interpretation thereof, including any judicial or administrative order, consent, decree or judgment, relating to pollution or protection of human health, the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including, without limitation, laws and regulations relating to the release or, to the Company's knowledge, threatened release of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum or petroleum products (collectively, "**Hazardous Materials**") or to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials (collectively, "**Environmental Laws**"); (ii) the Company and its subsidiaries have all permits, authorizations and approvals required under any applicable Environmental Laws and are each in compliance with their requirements; (iii) there are no pending or, to the Company's knowledge, threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigation or proceedings relating to any Environmental Law against the Company or any of its subsidiaries; and (iv) there are no events or circumstances that might reasonably be expected to form the basis of an order for clean-up or remediation, or an action, suit or proceeding by any private party or governmental body or agency, against or affecting the Company or any of its subsidiaries relating to Hazardous Materials or any Environmental Laws.

(hh) ERISA Compliance. Except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change, (i) each "employee benefit plan" (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, "**ERISA**")) established or maintained by the Company, its subsidiaries or their "ERISA Affiliates" (as defined below) are in compliance with ERISA: (ii) no "reportable event" (as defined under ERISA) has occurred or is reasonably expected to occur with respect to any "employee benefit plan" established or maintained by the Company, its subsidiaries or any of their ERISA Affiliates; (iii) no "employee benefit plan" established or maintained by the Company, its subsidiaries or any of their ERISA Affiliates, if such "employee benefit plan" were terminated, would have any "amount of unfunded benefit liabilities" (as defined under ERISA); and (iv) neither the Company, its subsidiaries nor any of their ERISA Affiliates has incurred or reasonably expects to incur any liability under (A) Title IV of ERISA with respect to termination of, or withdrawal from, any "employee benefit plan" or (B) Sections 412, 4971, 4975 or 4980B of the Code. Each employee benefit plan established or



maintained by the Company, its subsidiaries or any of their ERISA Affiliates that is intended to be qualified under Section 401(a) of the Code has received a favorable determination or opinion letter from the Internal Revenue Service upon which it can rely and, to the knowledge of the Company, nothing has occurred, whether by action or failure to act, which would cause the loss of such qualification. “**ERISA Affiliate**” means, with respect to the Company or any of its subsidiaries, any member of any group of organizations described in Sections 414(b), (c), (m) or (o) of the Internal Revenue Code of 1986, as amended, and the regulations and published interpretations thereunder (the “**Code**”) of which the Company or such subsidiary is a member.

(ii) **Brokers.** Except as otherwise disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus, there is no broker, finder or other party that is entitled to receive from the Company any brokerage or finder’s fee or other fee or commission as a result of any transactions contemplated by this Agreement.

(jj) **No Outstanding Loans or Other Extensions of Credit.** The Company does not have any outstanding extension of credit, in the form of a personal loan, to or for any director or executive officer (or equivalent thereof) of the Company except for such extensions of credit as are expressly permitted by Section 13(k) of the Exchange Act.

(kk) **Compliance with Laws.** The Company and its subsidiaries have been and are in compliance with all applicable laws, rules and regulations, except where failure to be so in compliance would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change.

(ll) **Dividend Restrictions.** Except as disclosed in the Registration Statement, the Pricing Prospectus and Prospectus, no subsidiary of the Company is prohibited or restricted, directly or indirectly, from paying dividends to the Company, or from making any other distribution with respect to such subsidiary’s equity securities or from repaying to the Company or any other subsidiary of the Company any amounts that may from time to time become due under any loans or advances to such subsidiary from the Company or from transferring any property or assets to the Company or to any other subsidiary.

(mm) **Anti-Corruption and Anti-Bribery Laws.** Neither the Company nor any of its subsidiaries nor any director, officer or employee of the Company or any of its subsidiaries, nor to the knowledge of the Company, any agent, affiliate or other person acting on behalf of the Company or any of its subsidiaries has, in the course of its actions for, or on behalf of, the Company or any of its subsidiaries (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expenses relating to political activity; (ii) made or taken any act in furtherance of an offer, promise, or authorization of any direct or indirect unlawful payment or benefit to any foreign or domestic government official or employee, including of any government-owned or controlled entity or public international organization, or any political party, party official, or candidate for political office; (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended (the “**FCPA**”), the UK Bribery Act 2010, or any other applicable anti-bribery or anti-corruption law; or (iv) made, offered, authorized, requested, or taken an act in furtherance of any unlawful bribe, rebate, payoff, influence payment, kickback or other unlawful payment or benefit. The Company and its subsidiaries and, to the knowledge of the Company, the Company’s affiliates have conducted their respective businesses in compliance with the FCPA and have instituted and maintain policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

(nn) Money Laundering Laws. The operations of the Company and its subsidiaries are, and have been conducted at all times, in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable jurisdictions, the rules and regulations thereunder and any related or similar applicable rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “**Money Laundering Laws**”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Money Laundering Laws is pending or, to the best knowledge of the Company, threatened.

(oo) Preclinical and Clinical Data and Regulatory Compliance. The preclinical tests and clinical trials, and other studies (collectively, “**studies**”) that are described in, or the results of which are referred to in, the Registration Statement, the Pricing Prospectus or the Prospectus were and, if still ongoing, are being conducted in all material respects in accordance with the protocols, procedures and controls designed and approved for such studies and with standard medical and scientific research procedures; each description of the results of such studies is accurate and complete in all material respects and fairly presents the data derived from such studies, and the Company and its subsidiaries have no knowledge of any other studies the results of which are inconsistent with, or otherwise call into question, the results described or referred to in the Registration Statement, the Pricing Prospectus or the Prospectus; the Company and its subsidiaries have made all such filings and obtained all such approvals as may be required by the Food and Drug Administration of the U.S. Department of Health and Human Services or any committee thereof or from any other U.S. or foreign government or drug or medical device regulatory agency, or health care facility Institutional Review Board (collectively, the “**Regulatory Agencies**”) to conduct their businesses as currently conducted and as described in the Registration Statement, the Pricing Prospectus or the Prospectus; neither the Company nor any of its subsidiaries has received any notice of, or correspondence from, any Regulatory Agency requiring the termination, suspension or modification of any clinical trials that are described or referred to in the Registration Statement, the Pricing Prospectus or the Prospectus; and the Company and its subsidiaries have each operated and currently are in compliance in all material respects with all applicable rules, regulations and policies of the Regulatory Agencies.

(pp) Sanctions. Neither the Company nor any of its subsidiaries, directors, officers, or employees, nor, to the knowledge of the Company, after due inquiry, any agent, affiliate or other person acting on behalf of the Company or any of its subsidiaries is currently the subject or the target of any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury (including, without limitation, the Ukraine-/Russia-related/Sectoral Sanctions Identification List sanctions program) or the U.S. Department of State, the United Nations Security Council, the European Union, His Majesty’s Treasury of the United Kingdom, the Swiss Secretariat of Economic Affairs, or other relevant sanctions authority (collectively, “**Sanctions**”); nor is the Company or any of its subsidiaries located, organized or resident in a country or territory that is the subject or the target of Sanctions, including, without limitation, Belarus, the so-called Donetsk People’s Republic, the so-called Luhansk People’s Republic, any other Covered Region of Ukraine identified pursuant to Executive Order 14065, the Crimea region of Ukraine, Cuba, Iran, North Korea, Russia and Syria (each, a “**Sanctioned Country**”); and the Company will not directly or indirectly use the proceeds of this offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, or any joint venture partner or other person or entity, for the purpose of financing the activities of or business with any

person, or in any country or territory, that at the time of such financing, is the subject or the target of Sanctions or in any other manner that will result in a violation by any person (including any person participating in the transaction whether as underwriter, advisor, investor or otherwise) of applicable Sanctions. For the past five years, the Company and its subsidiaries have not knowingly engaged in and are not now knowingly engaged in any dealings or transactions with any person that at the time of the dealing or transaction is or was the subject or the target of Sanctions or with any Sanctioned Country.

(qq) Sarbanes-Oxley. There is, and has been, no failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply with any applicable provision of the Sarbanes-Oxley Act of 2002, as amended and the rules and regulations promulgated in connection therewith, including Section 402 related to loans and Sections 302 and 906 related to certifications.

(rr) Cybersecurity. The Company and its subsidiaries' information technology assets and equipment, computers, systems, networks, hardware, software, websites, applications, and databases (collectively, "**IT Systems**") are adequate for, and operate and perform in all material respects as required in connection with the operation of the business of the Company and its subsidiaries as currently conducted, and free and clear of all material bugs, errors, defects, Trojan horses, time bombs, malware and other corruptants. The Company and its subsidiaries have implemented and maintained commercially reasonable physical, technical and administrative controls, policies, procedures, and safeguards to maintain and protect their material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and data, including "Personal Data," used in connection with their businesses. "**Personal Data**" means (i) a natural person's name, street address, telephone number, e-mail address, photograph, social security number or tax identification number, driver's license number, passport number, credit card number, bank information, or customer or account number; (ii) any information which would qualify as "personally identifying information" under the Federal Trade Commission Act, as amended; (iii) "personal data" as defined by the General Data Protection Rule; any information which would qualify as "protected health information" under the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act (collectively, "HIPAA"); and (v) any other piece of information that allows the identification of such natural person, or his or her family, or permits the collection or analysis of any data related to an identified person's health or sexual orientation. There have been no breaches, violations, outages or unauthorized uses of or accesses to same, except for those that have been remedied without material cost or liability or the duty to notify any other person, nor any incidents under internal review or investigations relating to the same. The Company and its subsidiaries are presently in material compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Personal Data and to the protection of such IT Systems and Personal Data from unauthorized use, access, misappropriation or modification.

(ss) Compliance with Data Privacy Laws. The Company and its subsidiaries are, and at all prior times since January 1, 2018 were, in material compliance with all applicable state and federal data privacy and security laws and regulations, (collectively, the "**Privacy Laws**"). In furtherance of its efforts to comply with the Privacy Laws, the Company and its subsidiaries have in place, comply with, and take appropriate steps reasonably designed to ensure compliance in all material respects with their policies and procedures relating to data privacy and security and the collection, storage, use, disclosure, handling, and analysis

of Personal Data (the “Policies”). The Company and its subsidiaries have at all times since January 1, 2018 made all disclosures to users or customers required by applicable Privacy Laws, and none of such disclosures made or contained in any Policy have, to the knowledge of the Company, been inaccurate or in violation of any applicable laws and regulatory rules or requirements in any material respect. The Company further certifies that neither it nor any subsidiary: (i) has received notice of any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice; (ii) is currently conducting or paying for, in whole or in part, any investigation, remediation, or other corrective action pursuant to any Privacy Law; or (iii) is a party to any order, decree, or agreement that imposes any obligation or liability under any Privacy Law.

(tt) Compliance with Health Care Laws. The Company and its subsidiaries are, and at all times have been, in compliance with all Health Care Laws. For purposes of this Agreement, “Health Care Laws” means: (i) the Federal Food, Drug, and Cosmetic Act (21 U.S.C. Section 301 et seq.), the Public Health Service Act (42 U.S.C. Section 201 et seq.), and the regulations promulgated thereunder; (ii) all applicable federal, state, local and foreign health care fraud and abuse laws, including, without limitation, the Anti-Kickback Statute (42 U.S.C. Section 1320a-7b(b)), the Civil False Claims Act (31 U.S.C. Section 3729 et seq.), the criminal false statements law (42 U.S.C. Section 1320a-7b(a)), 18 U.S.C. Sections 286 and 287, the health care fraud criminal provisions under HIPAA (42 U.S.C. Section 1320d et seq.), the Stark Law (42 U.S.C. Section 1395nn), the civil monetary penalties law (42 U.S.C. Section 1320a-7a), the exclusion law (42 U.S.C. Section 1320a-7), the Physician Payments Sunshine Act (42 U.S.C. Section 1320-7h), and applicable laws governing government funded or sponsored healthcare programs; (iii) HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, HITECH (42 U.S.C. Section 17921 et seq.); (iv) the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010; (v) licensure, quality, safety and accreditation requirements under applicable federal, state, local or foreign laws or regulatory bodies; (vi) all other local, state, federal, national, supranational and foreign laws, relating to the regulation of the Company or its subsidiaries, and (vii) the directives and regulations promulgated pursuant to such statutes and any state or non-U.S. counterpart thereof. Neither the Company nor any of its subsidiaries has received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any federal and/or state court or arbitrator or governmental or regulatory authority or third party alleging that any product operation or activity is in violation of any Health Care Laws nor, to the Company’s knowledge, is any such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action threatened. The Company and its subsidiaries have filed, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Health Care Laws, and all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and accurate on the date filed in all material respects (or were corrected or supplemented by a subsequent submission). Neither the Company nor any of its subsidiaries is a party to any corporate integrity agreements, monitoring agreements, consent decrees, settlement orders, or similar agreements with or imposed by any governmental or regulatory authority. Additionally, neither the Company, any of its subsidiaries, nor any of their respective employees, officers, directors, or agents has been excluded, suspended or debarred from participation in any U.S. federal health care program or human clinical research or, to the knowledge of the Company, is subject to a governmental inquiry, investigation, proceeding, or other similar action that could reasonably be expected to result in debarment, suspension, or exclusion.

(uu) No Unlawful Contributions or Other Payments. Neither the Company nor any of its subsidiaries nor, to the best of the Company's knowledge, any employee or agent of the Company or any subsidiary, has made any contribution or other payment to any official of, or candidate for, any federal, state or foreign office in violation of any applicable law or of the character required to be disclosed in the Registration Statement, the Pricing Prospectus or the Prospectus.

(vv) Forward-Looking Statements. Each financial or operational projection or other "forward-looking statement" (as defined by Section 27A of the Securities Act or Section 21E of the Exchange Act) contained in the Registration Statement, the Pricing Prospectus and the Prospectus (i) was so included by the Company in good faith and with reasonable basis after due consideration by the Company of the underlying assumptions, estimates and other applicable facts and circumstances and (ii) is accompanied by meaningful cautionary statements identifying those factors that could cause actual results to differ materially from those in such forward-looking statement. No such statement was made with the knowledge of an executive officer or director of the Company that it was false or misleading.

(ww) No Rights to Purchase Preferred Stock. The issuance and sale of the Stock as contemplated hereby will not cause any holder of any shares of capital stock, securities convertible into or exchangeable or exercisable for capital stock or options, warrants or other rights to purchase capital stock or any other securities of the Company to have any right to acquire any shares of preferred stock of the Company.

(xx) No Contract Terminations. Neither the Company nor any of its subsidiaries has sent or received any communication regarding termination of, or intent not to renew, any of the contracts or agreements referred to or described in the Pricing Prospectus, the Prospectus or any free writing prospectus, or referred to or described in, or filed as an exhibit to, the Registration Statement, and no such termination or non-renewal has been threatened by the Company or any of its subsidiaries or, to the Company's knowledge, any other party to any such contract or agreement, which threat of termination or non-renewal has not been rescinded as of the date hereof.

(yy) Distribution of Offering Materials. The Company has not, directly or indirectly, distributed and will not distribute any offering material in connection with the offering and sale of the Stock other than any Pricing Prospectus, the Prospectus and other materials, if any, permitted under the Securities Act and identified on Schedule E hereto.

(zz) Emerging Growth Company. From the first date on which the Company engaged directly or through any person authorized to act on its behalf in any communication in reliance on Section 5(d) of the Securities Act through the date hereof, the Company has been and is an "emerging growth company," as defined in Section 2(a) of the Securities Act (an "**Emerging Growth Company**").

(aaa) Testing the Waters Communications. The Company (a) has not alone engaged in any Testing-the-Waters Communication other than Testing-the-Waters Communications with the consent of the Representatives with entities that are qualified institutional buyers within the meaning of Rule 144A under the Securities Act or institutions that are accredited investors within the meaning of Rule 501 under the Securities Act and (b) has not authorized anyone other than the Representatives to engage in Testing-the-Waters Communications. The Company reconfirms that the Representatives has been authorized to act on its behalf in undertaking Testing-the-Waters Communications. The Company has not distributed any Written Testing-the-Waters Communications other than those listed on Schedule E hereto.

(bbb) Parties to Lock-Up Agreements. The Company has furnished to the Underwriters a letter agreement in the form attached hereto as Exhibit I (the "Lock-up Agreement") from each director and officer of the Company and certain beneficial owners of capital stock of the Company, in each case identified on Schedule D. If any additional persons shall become directors or officers of the Company prior to the end of the Company Lock-up Period (as defined below), the Company shall cause each such person, prior to or contemporaneously with their appointment or election as a director or officer of the Company, to execute and deliver to Cowen a Lock-up Agreement.

Any certificate signed by or on behalf of the Company and delivered to the Representatives or to counsel for the Underwriters shall be deemed to be a representation and warranty by the Company to each Underwriter as to the matters covered thereby.

3. PURCHASE, SALE AND DELIVERY OF OFFERED SECURITIES. On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company agrees to sell to the Underwriters, and the Underwriters agree, severally and not jointly, to purchase from the Company the respective numbers of shares of Stock set forth opposite the names of the Underwriters in Schedule A hereto.

The purchase price per share to be paid by the Underwriters to the Company for the Stock will be \$6.157 per share (the "Purchase Price").

The Company will deliver the Stock to the Representatives for the respective accounts of the several Underwriters, through the facilities of The Depository Trust Company, in each such case, issued in such names and in such denominations as the Representatives may direct by notice in writing to the Company given at or prior to 12:00 Noon, New York time, on the second (2<sup>nd</sup>) full business day preceding the Closing Date against payment of the aggregate Purchase Price therefor by wire transfer in federal (same day) funds to an account at a bank specified by the Company payable to the order of the Company for the Stock sold by them all at the offices of Wilmer Cutler Pickering Hale and Dorr LLP. Time shall be of the essence, and delivery at the time and place specified pursuant to this Agreement is a further condition of the obligations of each Underwriter hereunder. The time and date of the delivery and closing shall be at 10:00 A.M., New York time, on May 17, 2023, in accordance with Rule 15c6-1 of the Exchange Act. The time and date of such payment and delivery are herein referred to as the "Closing Date". The Closing Date and the location of delivery of, and the form of payment for, the Stock may be varied by agreement among the Company and the Representatives.

The several Underwriters propose to offer the Stock for sale upon the terms and conditions set forth in the Prospectus.

#### 4. FURTHER AGREEMENTS OF THE COMPANY

(i) FURTHER AGREEMENTS OF THE COMPANY. The Company agrees with the several Underwriters:

(a) Required Filings; Amendments or Supplements; Notice to the Representatives. To prepare the Rule 462(b) Registration Statement, if necessary, in a form approved by the Representatives and file such Rule 462(b) Registration Statement with the Commission by 10:00 P.M., New York time, on the date hereof, and the Company shall at the time of filing either pay to the Commission the filing fee for the Rule 462(b) Registration Statement or give irrevocable instructions for the payment of such fee pursuant to Rule 111(b) under the Rules and Regulations; to prepare the Prospectus in a form approved by the

Representatives containing information previously omitted at the time of effectiveness of the Registration Statement in reliance on Rules 430A, 430B or 430C of the Rules and Regulations and to file such Prospectus pursuant to Rule 424(b) of the Rules and Regulations not later than the second business (2<sup>nd</sup>) day following the execution and delivery of this Agreement or, if applicable, such earlier time as may be required by the Securities Act; to notify the Representatives immediately of the Company's intention to file or prepare any supplement or amendment to the Registration Statement or to the Prospectus and to make no amendment or supplement to the Registration Statement, the General Disclosure Package or to the Prospectus to which the Representatives shall reasonably object by notice to the Company after a reasonable period to review; to advise the Representatives, promptly after it receives notice thereof, of the time when any amendment to the Registration Statement has been filed or becomes effective or any supplement to the General Disclosure Package or the Prospectus or any amended Prospectus or any Issuer Free Writing Prospectus or any Written Testing-the-Waters Communication has been filed and to furnish the Underwriters with copies thereof; to file promptly all material required to be filed by the Company with the Commission pursuant to Rules 433(d) or 163(b)(2) of the Rules and Regulations, as the case may be; to file promptly all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act subsequent to the date of the Prospectus and for so long as the delivery of a prospectus (or in lieu thereof, the notice referred to in Rule 173(a) of the Rules and Regulations) is required in connection with the offering or sale of the Stock; to advise the Representatives, promptly after it receives notice thereof, of the issuance by the Commission of any stop order or of any order preventing or suspending the use of any Preliminary Prospectus, any Issuer Free Writing Prospectus, the Prospectus or any Written Testing-the-Waters Communication, of the suspension of the qualification of the Stock for offering or sale in any jurisdiction, of the initiation or threatening of any proceeding for any such purpose, or of any request by the Commission for the amending or supplementing of the Registration Statement, the General Disclosure Package or the Prospectus or for additional information including, but not limited to, any request for information concerning any Testing-the-Waters Communication; and, in the event of the issuance of any stop order or of any order preventing or suspending the use of any Preliminary Prospectus, any Issuer Free Writing Prospectus or the Prospectus or suspending any such qualification, and promptly to use its best efforts to obtain the withdrawal of such order.

(b) Emerging Growth Company. The Company will promptly notify the Representatives if the Company ceases to be an Emerging Growth Company at any time prior to the later of (a) the completion of the distribution of the Stock within the meaning of the Securities Act and (b) completion of the Lock-Up Period (as defined below). If at any time following the distribution of any Written Testing-the-Waters Communication there occurred or occurs an event or development as a result of which such Written Testing-the-Waters Communication included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify the Representatives and will promptly amend or supplement, at its own expense, such Written Testing-the-Waters Communication to eliminate or correct such untrue statement or omission.

(c) Permitted Free Writing Prospectus. The Company represents and agrees that, unless it obtains the prior consent of the Representatives, and each Underwriter represents and agrees that, unless it obtains the prior consent of the Company and the Representatives, it has not made and will not, other than the final term sheet prepared and filed pursuant to Section 4(d) hereof, make any offer relating to the Stock that would constitute a "free writing prospectus" as defined in Rule 405 of the Rules and Regulations unless the prior written consent of the Representatives has been received (each, a "Permitted Free Writing Prospectus"); *provided* that the prior written consent of the Representatives hereto shall be deemed to have been given in respect of the Issuer Free Writing Prospectus included in Schedule B hereto. The Company represents that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an Issuer Free Writing Prospectus, comply with the requirements of Rules 164 and 433 of the Rules and Regulations applicable to any Issuer Free Writing Prospectus, including the requirements relating to timely filing with the Commission, legending and record keeping and will not take any action that would result in an Underwriter or the Company being required to file with the Commission pursuant to Rule 433(d) of the Rules and Regulations a free writing prospectus prepared by or on behalf of such Underwriter that such Underwriter otherwise would not have been required to file thereunder.

(d) Ongoing Compliance. If at any time prior to the date when a prospectus relating to the Stock is required to be delivered (or in lieu thereof, the notice referred to in Rule 173(a) under the Securities Act) any event occurs or condition exists as a result of which the Prospectus as then amended or supplemented would include any untrue statement of a material fact, or omit to state any material fact necessary to make the statements therein, in light of the circumstances under which they were made when the Prospectus is delivered (or in lieu thereof, the notice referred to in Rule 173(a) of the Rules and Regulations), not misleading, or if it is necessary at any time to amend or supplement the Registration Statement or the Prospectus— or to file under the Exchange Act any document incorporated by reference in the Prospectus to comply with the Securities Act or the Exchange Act, that the Company will promptly notify the Representatives thereof and upon their request will prepare an appropriate amendment or supplement or upon their request make an appropriate filing pursuant to Section 13 or 14 of the Exchange Act in form and substance satisfactory to the Representatives which will correct such statement or omission or effect such compliance and will use its reasonable best efforts to have any amendment to the Registration Statement declared effective as soon as possible. The Company will furnish without charge to each Underwriter and to any dealer in securities as many copies as the Representatives may from time to time reasonably request of such amendment or supplement. In case any Underwriter is required to deliver a prospectus (or in lieu thereof, the notice referred to in Rule 173(a) of the Rules and Regulations) relating to the Stock, the Company upon the request of the Representatives will prepare promptly an amended or supplemented Prospectus as may be necessary to permit compliance with the requirements of Section 10(a)(3) of the Securities Act and deliver to such Underwriter as many copies as such Underwriter may request of such amended or supplemented Prospectus complying with Section 10(a)(3) of the Securities Act.

(e) Amendment to General Disclosure Package. If the General Disclosure Package is being used to solicit offers to buy the Stock at a time when the Prospectus is not yet available to prospective purchasers and any event shall occur as a result of which, in the judgment of the Company or in the reasonable opinion of the Underwriters, it becomes necessary to amend or supplement the General Disclosure Package in order to make the statements therein, in the light of the circumstances then prevailing, not misleading, or to make the statements therein not conflict with the information contained or incorporated by reference in the Registration Statement then on file and not superseded or modified, or if it is necessary at any time to amend or supplement the General Disclosure Package to comply with any law, the Company promptly will either (i) prepare, file with the Commission (if required) and furnish to the Underwriters and any dealers an appropriate amendment or supplement to the General Disclosure Package or (ii) prepare and file with the Commission an appropriate filing under the Exchange Act which shall be incorporated by reference in the General Disclosure Package so that the General Disclosure Package as so amended or supplemented will not, in the light of the circumstances then prevailing, be misleading or conflict with the Registration Statement then on file, or so that the General Disclosure Package will comply with law.

(f) Amendment to Issuer Free Writing Prospectus. If at any time following issuance of an Issuer Free Writing Prospectus there occurred or occurs an event or development as a result of which such Issuer Free Writing Prospectus conflicted or will conflict with the information contained in the Registration Statement, Pricing Prospectus or Prospectus, including any document incorporated by reference therein and any prospectus supplement deemed to be a part thereof and not superseded or modified or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances prevailing at the subsequent time, not misleading, the Company has promptly notified or will promptly



notify the Representatives so that any use of the Issuer Free Writing Prospectus may cease until it is amended or supplemented and has promptly amended or will promptly amend or supplement, at its own expense, such Issuer Free Writing Prospectus to eliminate or correct such conflict, untrue statement or omission. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus in reliance upon, and in conformity with, written information furnished to the Company through the Representatives by or on behalf of any Underwriter specifically for inclusion therein, which information the parties hereto agree is limited to the Underwriter's Information.

(g) Delivery of Registration Statement. To the extent not available on the Commission's Electronic Data Gathering, Analysis and Retrieval system or any successor system ("**EDGAR**"), upon the request of the Representatives, to furnish promptly to the Representatives and to counsel for the Underwriters a signed copy of the Registration Statement as originally filed with the Commission, and of each amendment thereto filed with the Commission, including all consents and exhibits filed therewith.

(h) Delivery of Copies. Upon request of the Representatives, to the extent not available on EDGAR, to deliver promptly to the Representatives in New York City such number of the following documents as the Representatives shall reasonably request: (i) conformed copies of the Registration Statement as originally filed with the Commission (in each case excluding exhibits), (ii) any Issuer Free Writing Prospectus, (iii) the Prospectus (the delivery of the documents referred to in clauses (i), (ii) and (iii) of this paragraph (h) to be made not later than 10:00 A.M., New York time, on the business day following the execution and delivery of this Agreement), (iv) conformed copies of any amendment to the Registration Statement (excluding exhibits), (v) any amendment or supplement to the General Disclosure Package or the Prospectus (the delivery of the documents referred to in clauses (iv) and (v) of this paragraph (h) to be made not later than 10:00 A.M., New York City time, on the business day following the date of such amendment or supplement) and (vi) any document incorporated by reference in the General Disclosure Package or the Prospectus (excluding exhibits thereto) (the delivery of the documents referred to in clause (vi) of this paragraph (h) to be made not later than 10:00 A.M., New York City time, on the business day following the date of such document).

(i) Earnings Statement. To make generally available to its stockholders as soon as practicable, but in any event not later than sixteen (16) months after the effective date of the Registration Statement (as defined in Rule 158(c) of the Rules and Regulations), an earnings statement of the Company and its subsidiaries (which need not be audited) complying with Section 11(a) of the Securities Act (including, at the option of the Company, Rule 158).

(j) Blue Sky Compliance. To take promptly from time to time such actions as the Representatives may reasonably request to qualify the Stock for offering and sale under the securities or Blue Sky laws of such jurisdictions (domestic or foreign) as the Representatives may reasonably designate and to continue such qualifications in effect, and to comply with such laws, for so long as required to permit the offer and sale of Stock in such jurisdictions; *provided* that the Company and its subsidiaries shall not be obligated to (i) qualify as foreign corporations in any jurisdiction in which they are not so qualified, (ii) file a general consent to service of process in any jurisdiction or (iii) subject itself to taxation in any such jurisdiction if it is not otherwise so subject.

(k) Reports. Upon request, during the period of five (5) years from the date hereof, to deliver to each of the Underwriters, (i) as soon as they are available, copies of all reports or other communications (financial or other) furnished to stockholders, and (ii) as soon as they are available, copies of any reports and financial statements furnished or filed with the Commission or any national securities exchange on which the Stock is listed. However, so long as the Company is subject to the reporting requirements of either Section 13 or Section 15(d) of the Exchange Act and is timely filing reports EDGAR, it is not required to furnish such reports or statements to the Underwriters.

(l) **Lock-Up.** During the period commencing on and including the date hereof and continuing through and including the 90th day following the date of the Prospectus (such period, as extended as described below, being referred to herein as the “**Lock-up Period**”), the Company will not, without the prior written consent of Cowen (which consent may be withheld in its sole discretion), directly or indirectly: (i) sell, offer to sell, contract to sell or lend any Common Stock or Related Securities (as defined below); (ii) effect any short sale, or establish or increase any “put equivalent position” (as defined in Rule 16a-1(h) under the Exchange Act) or liquidate or decrease any “call equivalent position” (as defined in Rule 16a-1(b) under the Exchange Act) of any Common Stock or Related Securities; (iii) pledge, hypothecate or grant any security interest in any Common Stock or Related Securities; (iv) in any other way transfer or dispose of any Common Stock or Related Securities; (v) enter into any swap, hedge or similar arrangement or agreement that transfers, in whole or in part, the economic risk of ownership of any Common Stock or Related Securities, regardless of whether any such transaction is to be settled in securities, in cash or otherwise; (vi) announce the offering of any Common Stock or Related Securities; (vii) submit or file any registration statement under the Securities Act in respect of any Common Stock or Related Securities (other than as contemplated by this Agreement with respect to the Stock); (viii) effect a reverse stock split, recapitalization, share consolidation, reclassification or similar transaction affecting the outstanding Common Stock; or (ix) publicly announce the intention to do any of the foregoing; provided, however, that the Company may (A) effect the transactions contemplated hereby; (B) issue Common Stock or options to purchase Common Stock, or issue Common Stock upon exercise of options, pursuant to any stock option, stock bonus or other stock plan or arrangement described in the Registration Statement, the Pricing Prospectus and the Prospectus, or issue Common Stock upon conversion of outstanding preferred shares, but only if the holders of such Common Stock, options, warrants or preferred shares, as the case may be, agree in writing with the Underwriters not to sell, offer, dispose of or otherwise transfer any such Common Stock or options during such Lock-up Period without the prior written consent of Cowen (which consent may be withheld in its sole discretion); and (C) file one or more registration statements on Form S-8 with respect to any Common Stock or Related Securities issued or issuable pursuant to any stock option, stock bonus, or other stock plan or arrangement described in the Registration Statement, Pricing Prospectus or the Prospectus; (D) sell shares of its common stock pursuant to that certain Open Market Sale Agreement, dated April 27, 2022, between the Company and Jefferies LLC, or any further amendments thereto, beginning on the date which is 30 days from the date of the Prospectus; (E) issue Common Stock in connection with the acquisition or license by the Company of the securities, business, property, technology or other assets of another person or business entity or pursuant to any employee benefit plan assumed by the Company in connection with any such acquisition; (F) issue Common Stock or Related Securities, or enter into an agreement to issue Common Stock or Related Securities, in connection with any merger, joint venture, strategic alliance, commercial or other collaborative transaction; *provided that*, in the case of immediately preceding clauses (E) and (F), the aggregate number of shares of Common Stock issued or underlying such Related Securities issued in connection with all such acquisitions and other transactions does not exceed 5% of the number of shares of Common Stock outstanding after giving effect to the consummation of the offering of the Stock pursuant to this Agreement and provided further that the Company shall cause each recipient of such shares to execute and deliver to the Underwriters, on or prior to such issuance, a “lock-up” agreement, substantially in the form of [Exhibit I](#) hereto; and (G) assist any stockholder of the Company in the establishment of a trading plan by such stockholder pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of Common Stock, provided that such plan does not provide for the transfer of shares of Common Stock during the Lock-Up Period, and the establishment of such plan does not require or otherwise result in any public filings or other public announcement of such plan during such Lock-Up Period and such plan is otherwise permitted to be implemented during the Lock-up Period pursuant to the terms of the Lock-Up Agreement between such stockholder and the Underwriters in connection with the offering of the Stock. For purposes of the foregoing, “**Related Securities**” shall mean any options or warrants or other rights to acquire Common Stock or any securities exchangeable or exercisable for or convertible into Common Stock, or to acquire other securities or rights ultimately exchangeable or exercisable for, or convertible into, Common Stock.

(m) Enforce Lock-Up Agreements. During the Lock-up Period, the Company will enforce all agreements between the Company and any of its securityholders that restrict or prohibit, expressly or in operation, the offer, sale or transfer of Stock or Related Securities or any of the other actions restricted or prohibited under the terms of the form of Lock-up Agreement. In addition, the Company will direct the transfer agent to place stop transfer restrictions upon any such securities of the Company that are bound by such "lock-up" agreements for the duration of the periods contemplated in such agreements, including, without limitation, "lock-up" agreements entered into by the Company's officers and directors and securityholders pursuant to Section 6(p) hereof.

(n) Delivery of SEC Correspondence. To supply the Underwriters with copies of all correspondence to and from, and all documents issued to and by, the Commission in connection with the registration of the Stock under the Securities Act or any of the Registration Statement or the Prospectus, or any amendment or supplement thereto or document incorporated by reference therein.

(o) Press Releases. Prior to the Closing Date, not to issue any press release or other communication directly or indirectly or hold any press conference with respect to the Company, its condition, financial or otherwise, or earnings, business affairs or business prospects (except for routine oral marketing communications in the ordinary course of business and consistent with the past practices of the Company and of which the Representatives is notified), without the prior consent of the Representatives, unless in the judgment of the Company and its counsel, and after notification to the Representatives, such press release or communication is required by law.

(p) Compliance with Regulation M. Until the Underwriters shall have notified the Company of the completion of the resale of the Stock, that the Company will not, and will use its reasonable best efforts to cause its affiliated purchasers (as defined in Regulation M under the Exchange Act) not to, either alone or with one or more other persons, bid for or purchase, for any account in which it or any of its affiliated purchasers has a beneficial interest, any Stock, or attempt to induce any person to purchase any Stock; and not to, and to use its reasonable best efforts to cause its affiliated purchasers not to, make bids or purchase for the purpose of creating actual, or apparent, active trading in or of raising the price of the Stock.

(q) Registrar and Transfer Agent. To maintain, at its expense, a registrar and transfer agent for the Stock.

(r) Use of Proceeds. To apply the net proceeds from the sale of the Stock as set forth in the Registration Statement, the General Disclosure Package and the Prospectus under the heading "Use of Proceeds," and except as disclosed in the General Disclosure Package, the Company does not intend to use any of the proceeds from the sale of the Stock hereunder to repay any outstanding debt owed to any affiliate of any Underwriter.

(s) Exchange Listing. To use its reasonable best efforts to list for quotation the Stock on the Nasdaq Market.

(t) Performance of Covenants and Satisfaction of Conditions. To use its reasonable best efforts to do and perform all things required to be done or performed under this Agreement by the Company prior to the Closing Date and to satisfy all conditions precedent to the delivery of the Stock.

5. PAYMENT OF EXPENSES. The Company agrees to pay all costs, fees and expenses incurred in connection with the performance of its obligations hereunder and in connection with the transactions contemplated hereby, including without limitation (i) all expenses incident to the issuance and delivery of the Stock (including all printing and engraving costs), (ii) all fees and expenses of the registrar and transfer agent of the Stock, (iii) all necessary issue, transfer and other stamp taxes in connection with the issuance

and sale of the Stock to the Underwriters, (iv) all fees and expenses of the Company's counsel, independent public or certified public accountants and other advisors, (v) all costs and expenses incurred in connection with the preparation, printing, filing, shipping and distribution of the Registration Statement (including financial statements, exhibits, schedules, consents and certificates of experts), the Pricing Prospectus, the Prospectus, each free writing prospectus prepared by or on behalf of, used by, or referred to by the Company, each General Use Free Writing Prospectus, and all amendments and supplements thereto, and this Agreement, (vi) all filing fees, reasonable and documented attorneys' fees and expenses incurred by the Company or the Underwriters in connection with qualifying or registering (or obtaining exemptions from the qualification or registration of) all or any part of the Stock for offer and sale under the state securities or blue sky laws or the provincial securities laws of Canada, and, if requested by the Representatives, preparing and printing a "Blue Sky Survey" or memorandum and a "Canadian wrapper", and any supplements thereto, advising the Underwriters of such qualifications, registrations and exemptions, (vii) the costs, fees and expenses incurred by the Underwriters in connection with determining their compliance with the rules and regulations of FINRA related to the Underwriters' participation in the offering and distribution of the Stock, including any related filing fees and the legal fees of, and disbursements by, counsel to the Underwriters, (viii) the costs and expenses of the Company relating to investor presentations on any "road show", any General Use Free Writing Prospectus or any Limited Use Free Writing Prospectus undertaken in connection with the offering of the Stock, including, without limitation, expenses associated with the preparation or dissemination of any electronic road show, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations with the prior approval of the Company, travel and lodging expenses of the representatives, employees and officers of the Company and any such consultants, and 50% of the cost of any aircraft chartered in connection with the road show, with the other 50% being paid by the Underwriters, (ix) the fees and expenses associated with listing the Stock on Nasdaq, and (x) all other fees, costs and expenses of the nature referred to in Item 14 of Part II of the Registration Statement; provided that the fees and expenses of counsel with respect to clauses (vi) and (vii) above shall not exceed \$40,000. Except as provided in this Section 5 and Sections 9 or Section 10 hereof, the Underwriters shall pay their own expenses, including the fees and disbursements of their counsel.

6. **CONDITIONS OF UNDERWRITERS' OBLIGATIONS.** The respective obligations of the several Underwriters hereunder are subject to the accuracy, when made and as of the Applicable Time and on the Closing Date, of the representations and warranties of the Company contained herein, to the accuracy of the statements of the Company made in any certificates pursuant to the provisions hereof, to the performance by the Company of its obligations hereunder, and to each of the following additional terms and conditions:

(a) **Registration Compliance; No Stop Orders.** The Registration Statement has become effective under the Securities Act, and no stop order suspending the effectiveness of the Registration Statement or any part thereof, preventing or suspending the use of any base prospectus, the Prospectus or any Permitted Free Writing Prospectus or any part thereof shall have been issued and no proceedings for that purpose or pursuant to Section 8A under the Securities Act shall have been initiated or threatened by the Commission, and all requests for additional information on the part of the Commission (to be included or incorporated by reference in the Registration Statement or the Prospectus or otherwise) shall have been complied with to the reasonable satisfaction of the Representatives; the Rule 462(b) Registration Statement, if any, each Issuer Free Writing Prospectus and the Prospectus shall have been filed with the Commission within the applicable time period prescribed for such filing by, and in compliance with, the Rules and Regulations and in accordance with Section (a), and the Rule 462(b) Registration Statement, if any, shall have become effective immediately upon its filing with the Commission; and FINRA shall have raised no unresolved objection to the fairness and reasonableness of the terms of this Agreement or the transactions contemplated hereby.

(b) No Material Misstatements. None of the Underwriters shall have discovered and disclosed to the Company on or prior to the Closing Date that the Registration Statement or any amendment or supplement thereto contains an untrue statement of a fact which, in the opinion of counsel for the Underwriters, is material or omits to state any fact which, in the opinion of such counsel, is material and is required to be stated therein or is necessary to make the statements therein not misleading, or that the General Disclosure Package, any Issuer Free Writing Prospectus or the Prospectus or any amendment or supplement thereto contains an untrue statement of fact which, in the opinion of such counsel, is material or omits to state any fact which, in the opinion of such counsel, is material and is necessary in order to make the statements, in the light of the circumstances in which they were made, not misleading.

(c) Corporate Proceedings. All corporate proceedings incident to the authorization, form and validity of each of this Agreement, the Stock, the Registration Statement, the General Disclosure Package, each Issuer Free Writing Prospectus and the Prospectus and the transactions contemplated hereby shall be reasonably satisfactory in all material respects to counsel for the Underwriters, and the Company shall have furnished to such counsel all documents and information that they may reasonably request to enable them to pass upon such matters.

(d) Opinion and 10b-5 Statement of Counsel for the Company. Goodwin Procter LLP shall have furnished to the Representatives such counsel's written opinion and 10b-5 Statement, as counsel to the Company, addressed to the Underwriters and dated the Closing Date, in form and substance reasonably satisfactory to the Representatives.

(e) Opinion of Intellectual Property Counsel for the Company. Dechert LLP shall have furnished to the Representatives such counsel's written opinion, as intellectual property counsel to the Company, addressed to the Underwriters and dated the Closing Date, in form and substance reasonably satisfactory to the Representatives.

(f) Opinion and 10b-5 Statement of Counsel for the Underwriters. The Representatives shall have received from Wilmer Cutler Pickering Hale and Dorr LLP, counsel for the Underwriters, such opinion or opinions and 10b-5 Statement, dated the Closing Date, with respect to such matters as the Underwriters may reasonably require, and the Company shall have furnished to such counsel such documents as they request for enabling them to pass upon such matters.

(g) Comfort Letter. At the time of the execution of this Agreement, the Representatives shall have received from Ernst & Young LLP a letter, addressed to the Underwriters, executed and dated such date, in form and substance satisfactory to the Representatives (i) confirming that they are an independent registered accounting firm with respect to the Company and its subsidiaries within the meaning of the Securities Act and the Rules and Regulations and PCAOB and (ii) stating the conclusions and findings of such firm, of the type ordinarily included in accountants' "comfort letters" to underwriters, with respect to the financial statements and certain financial information contained or incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus.

(h) Bring Down Comfort. On the effective date of any post-effective amendment to the Registration Statement and on the Closing Date, the Representatives shall have received a letter (the "**bring-down letter**") from Ernst & Young LLP addressed to the Underwriters and dated the Closing Date confirming, as of the date of the bring-down letter (or, with respect to matters involving changes or developments since the respective dates as of which specified financial information is given in the General Disclosure Package and the Prospectus, as the case may be, as of a date not more than three (3) business days prior to the date of the bring-down letter), the conclusions and findings of such firm, of the type ordinarily included in accountants' "comfort letters" to underwriters, with respect to the financial information and other matters covered by its letter delivered to the Representatives concurrently with the execution of this Agreement pursuant to paragraph (g) of this Section 5.

(i) Officer's Certificate. The Company shall have furnished to the Representatives a certificate, dated the Closing Date, of its President or Chief Executive Officer and its Chief Financial Officer stating in their respective capacities as officers of the Company on behalf of the Company that (i) no stop order suspending the effectiveness of the Registration Statement (including, for avoidance of doubt, any Rule 462(b) Registration Statement), or any post-effective amendment thereto, shall be in effect and no proceedings for such purpose shall have been instituted or, to their knowledge, threatened by the Commission, (ii) for the period from and including the date of this Agreement through and including such Closing Date, there has not occurred any Material Adverse Effect, (iii) to their knowledge, after reasonable investigation, as of such Closing Date, the representations and warranties of the Company in this Agreement are true and correct and the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied hereunder at or prior to such Closing Date, and (iv) there has not been, subsequent to the date of the most recent audited financial statements included or incorporated by reference in the General Disclosure Package, any Material Adverse Effect in the financial position or results of operations of the Company, or any change or development that, singularly or in the aggregate, would reasonably be expected to involve a Material Adverse Effect, except as set forth in the General Disclosure Package and the Prospectus.

(j) No Material Adverse Change. Since the date of the latest audited financial statements included in the General Disclosure Package or incorporated by reference in the General Disclosure Package as of the date hereof, no Material Adverse Change has occurred, in the judgment of the Representatives, so as to make it impracticable or inadvisable to proceed with the sale or delivery of the Stock on the terms and in the manner contemplated in the General Disclosure Package.

(k) No Legal Impediment to Issuance. No action shall have been taken and no law, statute, rule, regulation or order shall have been enacted, adopted or issued by any governmental or regulatory agency or body which would prevent the issuance or sale of the Stock; and no injunction, restraining order or order of any other nature by any federal or state court of competent jurisdiction shall have been issued which would prevent the issuance or sale of the Stock or materially and adversely affect or potentially materially and adversely affect the business or operations of the Company.

(l) No Downgrade. Subsequent to the execution and delivery of this Agreement (i) no downgrading shall have occurred in the Company's corporate credit rating or the rating accorded the Company's debt securities by any "nationally recognized statistical rating organization," as that term is defined by the Commission for purposes of Rule 436(g)(2) of the Rules and Regulations and (ii) no such organization shall have publicly announced that it has under surveillance or review (other than an announcement with positive implications of a possible upgrading), the Company's corporate credit rating or the rating of any of the Company's debt securities.

(m) Market Conditions. Subsequent to the execution and delivery of this Agreement there shall not have occurred any of the following: (i) trading in any of the Company's securities shall have been suspended or materially limited by the Commission or the Exchange, or trading in securities generally on the New York Stock Exchange, Nasdaq Global Select Market, Nasdaq Global Market, Nasdaq Capital Market or the NYSE MKT LLC or in the over-the-counter market, or trading in any securities of the Company on any exchange or in the over-the-counter market, shall have been suspended or materially limited, or minimum or maximum prices or maximum range for prices shall have been established on any such exchange or such market by the Commission, by such exchange or market or by any other regulatory body or governmental authority having jurisdiction, (ii) a banking moratorium shall have been declared by Federal or state authorities or a material disruption has occurred in commercial banking or securities settlement or clearance services in the United States, (iii) the United States shall have become engaged in hostilities, or the subject of an act of terrorism, or there shall have been an outbreak of or escalation in hostilities involving the United States, or there shall have been a declaration of a national emergency or war by the United States or (iv) there shall have occurred such a material adverse change in general economic,

political or financial conditions (or the effect of international conditions on the financial markets in the United States shall be such) as to make it, in the judgment of the Representatives, impracticable or inadvisable to proceed with the sale or delivery of the Stock on the terms and in the manner contemplated in the General Disclosure Package and the Prospectus.

(n) Exchange Listing. The Principal Market shall have approved the Stock for listing therein, subject only to official notice of issuance. The Company shall have filed a Notification: Listing of Additional shares with Nasdaq and shall have received no objection thereto from Nasdaq.

(o) Good Standing. The Representatives shall have received on and as of the Closing Date satisfactory evidence of the good standing of the Company and its subsidiaries in their respective jurisdictions of organization and their good standing as foreign entities in such other jurisdictions as the Representatives may reasonably request, in each case in writing or any standard form of telecommunication from the appropriate Governmental Authorities of such jurisdictions.

(p) Lock Up Agreements. On or prior to the date hereof, the Company shall have furnished to Cowen an agreement in the form of Exhibit I hereto from all of the officers and directors of the Company and certain beneficial owners of capital stock of the Company, in each case identified on Schedule D and each such agreement shall be in full force and effect on the Closing Date.

(q) Secretary's Certificate. The Company shall have furnished to the Representatives a Secretary's Certificate of the Company, in form and substance reasonably satisfactory to counsel for the Underwriters and customary for the type of offering contemplated by this Agreement.

(r) Additional Document. On or prior to the Closing Date, the Company shall have furnished to the Representatives such further certificates and documents as the Representatives may reasonably request.

All opinions, letters, evidence and certificates mentioned above or elsewhere in this Agreement shall be deemed to be in compliance with the provisions hereof only if they are in form and substance reasonably satisfactory to counsel for the Underwriters.

#### 7. INDEMNIFICATION AND CONTRIBUTION.

(a) Indemnification of Underwriters by the Company. The Company shall indemnify and hold harmless:

each Underwriter, its affiliates, directors, officers, managers, members, employees, representatives and agents and each person, if any, who controls any Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act (collectively the "**Underwriter Indemnified Parties**," and each an "**Underwriter Indemnified Party**") against any loss, claim, damage, expense or liability whatsoever (or any action, investigation or proceeding in respect thereof), joint or several, to which such Underwriter Indemnified Party may become subject, under the Securities Act or otherwise, insofar as such loss, claim, damage, expense, liability, action, investigation or proceeding arises out of or is based upon (A) any untrue statement or alleged untrue statement of a material fact contained in any Written Testing-the-Waters Communication, any Issuer Free Writing Prospectus, any "issuer information" filed or required to be filed pursuant to Rule 433(d) of the Rules and Regulations, the Registration Statement, the Prospectus, or in any amendment or supplement thereto or document incorporated by reference therein or in any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the offering of the Common Stock, including

any roadshow or investor presentations made to investors by the Company (whether in person or electronically) (“**Marketing Materials**”) or (B) the omission or alleged omission to state in any Written Testing-the-Waters Communication, any Issuer Free Writing Prospectus, any “issuer information” filed or required to be filed pursuant to Rule 433(d) of the Rules and Regulations, the Registration Statement or the Prospectus, or in any amendment or supplement thereto or document incorporated by reference therein, or in any Marketing Materials, a material fact required to be stated therein or necessary to make the statements therein not misleading, and shall reimburse each Underwriter Indemnified Party promptly upon demand for any legal fees or other expenses reasonably incurred by that Underwriter Indemnified Party in connection with investigating, or preparing to defend, or defending against, or appearing as a third party witness in respect of, or otherwise incurred in connection with, any such loss, claim, damage, expense, liability, action, investigation or proceeding, as such fees and expenses are incurred; *provided, however*, that the Company shall not be liable in any such case to the extent that any such loss, claim, damage, expense or liability arises out of or is based upon an untrue statement or alleged untrue statement in, or omission or alleged omission from any Preliminary Prospectus, the Registration Statement or the Prospectus, or any such amendment or supplement thereto, any Issuer Free Writing Prospectus or any Marketing Materials made in reliance upon and in conformity with written information furnished to the Company through the Representatives by or on behalf of any Underwriter specifically for use therein, which information the parties hereto agree is limited to the Underwriter’s Information.

The indemnity agreement in this Section 7(a) is not exclusive and is in addition to each other liability which the Company might have under this Agreement or otherwise, and shall not limit any rights or remedies which may otherwise be available under this Agreement, at law or in equity to any Underwriter Indemnified Party.

(b) Indemnification of Company by the Underwriters. Each Underwriter, severally and not jointly, shall indemnify and hold harmless the Company and its directors, its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act (collectively the “**Company Indemnified Parties**” and each a “**Company Indemnified Party**”) against any loss, claim, damage, expense or liability whatsoever (or any action, investigation or proceeding in respect thereof), joint or several, to which such Company Indemnified Party may become subject, under the Securities Act or otherwise, insofar as such loss, claim, damage, expense, liability, action, investigation or proceeding arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in any Preliminary Prospectus, any Issuer Free Writing Prospectus, any “issuer information” filed or required to be filed pursuant to Rule 433(d) of the Rules and Regulations, the Registration Statement or the Prospectus, or in any amendment or supplement thereto, or (ii) the omission or alleged omission to state in any Preliminary Prospectus, any Issuer Free Writing Prospectus, any “issuer information” filed or required to be filed pursuant to Rule 433(d) of the Rules and Regulations, the Registration Statement or the Prospectus, or in any amendment or supplement thereto, a material fact required to be stated therein or necessary to make the statements therein not misleading, but in each case only to the extent that the untrue statement or alleged untrue statement or omission or alleged omission was made in reliance upon and in conformity with written information furnished to the Company through the Representatives by or on behalf of that Underwriter specifically for use therein, which information the parties hereto agree is limited to the Underwriter’s Information, and shall reimburse the Company Indemnified Parties for any legal or other expenses reasonably incurred by such party in connection with investigating or preparing to defend or defending against or appearing as third party witness in connection with any such loss, claim, damage, liability, action, investigation or proceeding, as such fees and expenses are incurred. This indemnity agreement is not exclusive and will be in addition to any liability which the Underwriters might otherwise have and shall not limit any rights or remedies which may otherwise be available under this Agreement, at law or in equity to the Company Indemnified Parties.



(c) Promptly after receipt by an indemnified party under this Section 7 of notice of the commencement of any action, the indemnified party shall, if a claim in respect thereof is to be made against an indemnifying party under this Section 7, notify such indemnifying party in writing of the commencement of that action; *provided, however*, that the failure to notify the indemnifying party shall not relieve it from any liability which it may have under this Section 7 except to the extent it has been materially prejudiced by such failure; and, *provided, further*, that the failure to notify an indemnifying party shall not relieve it from any liability which it may have to an indemnified party otherwise than under this Section 7. If any such action shall be brought against an indemnified party, and it shall notify the indemnifying party thereof, the indemnifying party shall be entitled to participate therein and, to the extent that it wishes, jointly with any other similarly notified indemnifying party, to assume the defense of such action with counsel reasonably satisfactory to the indemnified party (which counsel shall not, except with the written consent of the indemnified party, be counsel to the indemnifying party). After notice from the indemnifying party to the indemnified party of its election to assume the defense of such action, except as provided herein, the indemnifying party shall not be liable to the indemnified party under Section 7 for any legal or other expenses subsequently incurred by the indemnified party in connection with the defense of such action other than reasonable costs of investigation; *provided, however*, that any indemnified party shall have the right to employ separate counsel in any such action and to participate in the defense of such action but the fees and expenses of such counsel (other than reasonable costs of investigation) shall be at the expense of such indemnified party unless (i) the employment thereof has been specifically authorized in writing by the Company in the case of a claim for indemnification under Section 7(a) or the Representatives in the case of a claim for indemnification under Section 7(b), (ii) such indemnified party shall have been advised by its counsel that there may be one or more legal defenses available to it which are different from or additional to those available to the indemnifying party or (iii) the indemnifying party has failed to assume the defense of such action and employ counsel reasonably satisfactory to the indemnified party within a reasonable period of time after notice of the commencement of the action or the indemnifying party does not diligently defend the action after assumption of the defense, in which case, if such indemnified party notifies the indemnifying party in writing that it elects to employ separate counsel at the expense of the indemnifying party, the indemnifying party shall not have the right to assume the defense of (or, in the case of a failure to diligently defend the action after assumption of the defense, to continue to defend) such action on behalf of such indemnified party and the indemnifying party shall be responsible for legal or other expenses subsequently incurred by such indemnified party in connection with the defense of such action; *provided, however*, that the indemnifying party shall not, in connection with any one such action or separate but substantially similar or related actions in the same jurisdiction arising out of the same general allegations or circumstances, be liable for the reasonable fees and expenses of more than one separate firm of attorneys at any time for all such indemnified parties (in addition to any local counsel), which firm shall be designated in writing by the Representatives if the indemnified parties under this Section 7 consist of any Underwriter Indemnified Party or by the Company if the indemnified parties under this Section 7 consist of any Company Indemnified Parties. Subject to this Section 7(c), the amount payable by an indemnifying party under Section 7 shall include, but not be limited to, (x) reasonable and documented legal fees and expenses of counsel to the indemnified party and any other expenses in investigating, or preparing to defend or defending against, or appearing as a third party witness in respect of, or otherwise incurred in connection with, any action, investigation, proceeding or claim, and (y) all amounts paid in settlement of any of the foregoing. No indemnifying party shall, without the prior written consent of the indemnified parties, settle or compromise or consent to the entry of judgment with respect to any pending or threatened action or any claim whatsoever, in respect of which indemnification or contribution could be sought under this Section 7 (whether or not the indemnified parties are actual or potential parties thereto), unless such settlement, compromise or consent (i) includes an unconditional release of each indemnified party in form and substance reasonably satisfactory to such indemnified party from all liability arising out of such action or claim and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act by

or on behalf of any indemnified party. Subject to the provisions of the following sentence, no indemnifying party shall be liable for settlement of any pending or threatened action or any claim whatsoever that is effected without its written consent (which consent shall not be unreasonably withheld or delayed), but if settled with its written consent, if its consent has been unreasonably withheld or delayed or if there be a judgment for the plaintiff in any such matter, the indemnifying party agrees to indemnify and hold harmless any indemnified party from and against any loss or liability by reason of such settlement or judgment. In addition, if at any time an indemnified party shall have requested that an indemnifying party reimburse the indemnified party for fees and expenses of counsel, such indemnifying party agrees that it shall be liable for any settlement of the nature contemplated by Section 7(a) effected without its written consent if (i) such settlement is entered into more than forty-five (45) days after receipt by such indemnifying party of the request for reimbursement, (ii) such indemnifying party shall have received notice of the terms of such settlement at least thirty (30) days prior to such settlement being entered into and (iii) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

(d) If the indemnification provided for in this Section 7 is unavailable or insufficient to hold harmless an indemnified party under Section 7(a) or 7(b), then each indemnifying party shall, in lieu of indemnifying such indemnified party, contribute to the amount paid, payable or otherwise incurred by such indemnified party as a result of such loss, claim, damage, expense or liability (or any action, investigation or proceeding in respect thereof), as incurred, (i) in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriters on the other from the offering of the Stock, or (ii) if the allocation provided by clause (i) of this Section 7(d) is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) of this Section 7(d) but also the relative fault of the Company on the one hand and the Underwriters on the other with respect to the statements, omissions, acts or failures to act which resulted in such loss, claim, damage, expense or liability (or any action, investigation or proceeding in respect thereof) as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Underwriters on the other with respect to such offering shall be deemed to be in the same proportion as the total net proceeds from the offering of the Stock purchased under this Agreement (before deducting expenses) received by the Company bear to the total underwriting discounts and commissions received by the Underwriters with respect to the Stock purchased under this Agreement, in each case as set forth in the table on the cover page of the Prospectus. The relative fault of the Company on the one hand and the Underwriters on the other shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company on the one hand or the Underwriters on the other, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such untrue statement, omission, act or failure to act; *provided* that the parties hereto agree that the written information furnished to the Company through the Representatives by or on behalf of the Underwriters for use in the Preliminary Prospectus, the Registration Statement or the Prospectus, or in any amendment or supplement thereto, consists solely of the Underwriter's Information.

(e) The Company and the Underwriters agree that it would not be just and equitable if contributions pursuant to Section 7(d) above were to be determined by pro rata allocation or by any other method of allocation which does not take into account the equitable considerations referred to Section 7(d) above. The amount paid or payable by an indemnified party as a result of the loss, claim, damage, expense, liability, action, investigation or proceeding referred to in Section 7(d) above shall be deemed to include, subject to the limitations set forth above, any legal or other expenses reasonably incurred by such indemnified party in connection with investigating, preparing to defend or defending against or appearing as a third party witness in respect of, or otherwise incurred in connection with, any such loss, claim, damage, expense, liability, action, investigation or proceeding. Notwithstanding the provisions of this Section 7, no Underwriters shall be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the offering of the

Stock exceeds the amount of any damages which the Underwriter has otherwise paid or become liable to pay by reason of any untrue or alleged untrue statement, omission or alleged omission, act or alleged act or failure to act or alleged failure to act. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations to contribute as provided in this Section 7 are several in proportion to their respective underwriting obligations and not joint.

8. *TERMINATION.* The obligations of the Underwriters hereunder may be terminated by the Representatives, in their absolute discretion by written notice given to the Company prior to delivery of and payment for the Stock if, prior to that time, any of the events described in Sections 6(j), 6(l) or 6(m) have occurred or if the Underwriters shall decline to purchase the Stock for any reason permitted under this Agreement.

9. *REIMBURSEMENT OF UNDERWRITERS' EXPENSES.* Notwithstanding anything to the contrary in this Agreement, if (a) this Agreement shall have been terminated pursuant to Section 8 or 10, (b) the Company shall fail to tender the Stock for delivery to the Underwriters for any reason not permitted under this Agreement, (c) the Underwriters shall decline to purchase the Stock for any reason permitted under this Agreement or (d) the sale of the Stock is not consummated because any condition to the obligations of the Underwriters set forth herein is not satisfied or because of the refusal, inability or failure on the part of the Company to perform any agreement herein or to satisfy any condition or to comply with the provisions hereof, then in addition to the payment of amounts in accordance with Section 5, the Company shall reimburse the Underwriters for the fees and expenses of Underwriters' counsel and for such other out-of-pocket expenses as shall have been reasonably incurred by them in connection with this Agreement and the proposed purchase of the Stock, including, without limitation, travel and lodging expenses of the Underwriters, and upon demand the Company shall pay the full amount thereof to the Representatives; *provided* that if this Agreement is terminated pursuant to Section 10 by reason of the default of one or more Underwriters, the Company shall not be obligated to reimburse any defaulting Underwriter on account of expenses to the extent incurred by such defaulting Underwriter, *provided further* that the foregoing shall not limit any reimbursement obligation of the Company to any non-defaulting Underwriter under this Section 9.

10. *SUBSTITUTION OF UNDERWRITERS.* If any Underwriter or Underwriters shall default in its or their obligations to purchase shares of Stock hereunder on any Closing Date and the aggregate number of shares which such defaulting Underwriter or Underwriters agreed but failed to purchase does not exceed ten percent (10%) of the total number of shares to be purchased by all Underwriters on such Closing Date, the other Underwriters shall be obligated severally, in proportion to their respective commitments hereunder, to purchase the shares which such defaulting Underwriter or Underwriters agreed but failed to purchase on such Closing Date. If any Underwriter or Underwriters shall so default and the aggregate number of shares with respect to which such default or defaults occur is more than ten percent (10%) of the total number of shares to be purchased by all Underwriters on such Closing Date and arrangements satisfactory to the Representatives and the Company for the purchase of such shares by other persons are not made within forty-eight (48) hours after such default, this Agreement shall terminate.

If the remaining Underwriters or substituted Underwriters are required hereby or agree to take up all or part of the shares of Stock of a defaulting Underwriter or Underwriters on such Closing Date as provided in this Section 10, (i) the Company shall have the right to postpone such Closing Date for a period of not more than five (5) full business days in order that the Company may effect whatever changes may thereby be made necessary in the Registration Statement or the Prospectus, or in any other documents or arrangements, and the Company agrees promptly to file any amendments to the Registration Statement or supplements to the Prospectus which may thereby be made necessary, and (ii) the respective numbers of shares to be purchased by the remaining Underwriters or substituted Underwriters shall be taken as the basis of their underwriting obligation for all purposes of this Agreement. Nothing herein contained shall relieve

any defaulting Underwriter of its liability to the Company or the other Underwriters for damages occasioned by its default hereunder. Any termination of this Agreement pursuant to this Section 10 shall be without liability on the part of any non-defaulting Underwriter or the Company, except that the representations, warranties, covenants, indemnities, agreements and other statements set forth in Section 2, the obligations with respect to expenses to be paid or reimbursed pursuant to Sections 5 and 9 and the provisions of Section 7 and Sections 11 through 21, inclusive, shall not terminate and shall remain in full force and effect.

11. *ABSENCE OF FIDUCIARY RELATIONSHIP.* The Company acknowledges and agrees that:

- (a) each Underwriter's responsibility to the Company is solely contractual in nature, the Representatives have been retained solely to act as underwriter in connection with the sale of the Stock and no fiduciary, advisory or agency relationship between the Company and the Representatives have been created in respect of any of the transactions contemplated by this Agreement, irrespective of whether any of the Representatives have advised or is advising the Company on other matters;
- (b) the price of the Stock set forth in this Agreement was established by the Company following discussions and arms-length negotiations with the Representatives, and the Company is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;
- (c) it has been advised that the Representatives and their respective affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and that the Representatives have no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship; and
- (d) it waives, to the fullest extent permitted by law, any claims it may have against the Representatives for breach of fiduciary duty or alleged breach of fiduciary duty and agrees that the Representatives shall have no liability (whether direct or indirect) to the Company in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on behalf of or in right of the Company, including stockholders, employees or creditors of the Company.

12. *SUCCESSORS; PERSONS ENTITLED TO BENEFIT OF AGREEMENT.* This Agreement shall inure to the benefit of and be binding upon the several Underwriters, the Company and their respective successors and assigns. Nothing expressed or mentioned in this Agreement is intended or shall be construed to give any person, other than the persons mentioned in the preceding sentence, any legal or equitable right, remedy or claim under or in respect of this Agreement, or any provisions herein contained, this Agreement and all conditions and provisions hereof being intended to be and being for the sole and exclusive benefit of such persons and for the benefit of no other person; except that the representations, warranties, covenants, agreements and indemnities of the Company contained in this Agreement shall also be for the benefit of the Underwriter Indemnified Parties, and the indemnities of the several Underwriters shall be for the benefit of the Company Indemnified Parties. It is understood that each Underwriter's responsibility to the Company is solely contractual in nature and the Underwriters do not owe the Company, or any other party, any fiduciary duty as a result of this Agreement. No purchaser of any of the Stock from any Underwriter shall be deemed to be a successor or assign by reason merely of such purchase.

13. *SURVIVAL OF INDEMNITIES, REPRESENTATIONS, WARRANTIES, ETC.* The respective indemnities, covenants, agreements, representations, warranties and other statements of the Company and the several Underwriters, as set forth in this Agreement or made by them respectively, pursuant to this Agreement, shall remain in full force and effect, regardless of any investigation made by or on behalf of any Underwriter, the Company or any person controlling any of them and shall survive delivery of and payment for the Stock. Notwithstanding any termination of this Agreement, including without limitation any termination pursuant to Section 8 or Section 10, the indemnities, covenants, agreements, representations, warranties and other statements forth in Sections 2, 5, 7 and 9 and Sections 11 through 21, inclusive, of this Agreement shall not terminate and shall remain in full force and effect at all times.

14. *RECOGNITION OF THE U.S. SPECIAL RESOLUTION REGIMES*

(a) In the event that any Underwriter that is a Covered Entity becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer from such Underwriter of this Agreement, and any interest and obligation in or under this Agreement, will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if this Agreement, and any such interest and obligation, were governed by the laws of the United States or a state of the United States.

(b) In the event that any Underwriter that is a Covered Entity or a BHC Act Affiliate of such Underwriter becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under this Agreement that may be exercised against such Underwriter are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if this Agreement were governed by the laws of the United States or a state of the United States.

15. *NOTICES*. All statements, requests, notices and agreements hereunder shall be in writing, and:

(a) if to the Underwriters, shall be delivered or sent by mail, telex, facsimile transmission or email to Cowen and Company, LLC, Attention: Head of Equity Capital Markets, Fax: 646-562-1249 with a copy to the General Counsel, Fax: 646-562-1130; William Blair & Company, L.L.C., Attention: General Counsel, Fax: (312) 551-464; and a copy (which shall not constitute notice) to Wilmer Cutler Pickering Hale and Dorr LLP, Attention: Lisa Firenze, Fax: (212) 230-8888; and

(b) if to the Company shall be delivered or sent by mail, telex, facsimile transmission or email to Ikena Oncology, Inc. Attention: Chief Financial Officer and Head of Corporate Development, email [contracts@ikenaoncology.com](mailto:contracts@ikenaoncology.com); and a copy (which shall not constitute notice) to Goodwin Procter LLP, Attention: Stephanie Richards, Fax: (617) 321-4374;

*provided, however*, that any notice to an Underwriter pursuant to Section 7 shall be delivered or sent by mail, or facsimile transmission to such Underwriter at its address set forth in its acceptance telex to the Representatives, which address will be supplied to any other party hereto by the Representatives upon request. Any such statements, requests, notices or agreements shall take effect at the time of receipt thereof.

16. *DEFINITION OF CERTAIN TERMS*. For purposes of this Agreement, (a) "**affiliate**" has the meaning set forth in Rule 405 under the Securities Act, (b) "**business day**" means any day on which the New York Stock Exchange, Inc. is open for trading (c) "**subsidiary**" has the meaning set forth in Rule 405 of the Rules and Regulations; (d) "**BHC Act Affiliate**" has the meaning assigned to the term "affiliate" in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k), (e) "**Covered Entity**" means any of the following: (i) a "covered entity" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b); (ii) a "covered bank" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or (iii) a "covered FSI" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b), (f) "**Default Right**" has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable, (g) "**U.S. Special Resolution Regime**" means each of (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder and (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder.

17. **GOVERNING LAW, JURISDICTION, WAIVER OF JURY TRIAL.** This Agreement shall be governed by and construed in accordance with the laws of the State of New York, including without limitation Section 5-1401 of the New York General Obligations. The Company irrevocably (a) submits to the exclusive jurisdiction of the Federal and state courts in the Borough of Manhattan in The City of New York for the purpose of any suit, action or other proceeding arising out of this Agreement or the transactions contemplated by this Agreement, the Registration Statement or the Prospectus, (b) agrees that all claims in respect of any such suit, action or proceeding may be heard and determined by any such court, (c) waives to the fullest extent permitted by applicable law, any immunity from the jurisdiction of any such court or from any legal process, (d) agrees not to commence any such suit, action or proceeding other than in such courts, and (e) waives, to the fullest extent permitted by applicable law, any claim that any such suit, action or proceeding is brought in an inconvenient forum. **Each of the parties to this Agreement hereby waives any right to trial by jury in any suit or proceeding arising out of or relating to this Agreement.**

18. **UNDERWRITERS' INFORMATION.** The parties hereto acknowledge and agree that, for all purposes of this Agreement, the Underwriters' Information consists solely of the following information in the Prospectus: the statements concerning the Underwriters contained in the thirty-third paragraph under the heading "Underwriting."

19. **AUTHORITY OF THE REPRESENTATIVES.** In connection with this Agreement, the Representatives will act for and on behalf of the several Underwriters, and any action taken under this Agreement by the Representatives, will be binding on all the Underwriters.

20. **PARTIAL UNENFORCEABILITY.** The invalidity or unenforceability of any section, paragraph, clause or provision of this Agreement shall not affect the validity or enforceability of any other section, paragraph, clause or provision hereof. If any section, paragraph, clause or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

21. **GENERAL.** This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof. In this Agreement, the masculine, feminine and neuter genders and the singular and the plural include one another. The section headings in this Agreement are for the convenience of the parties only and will not affect the construction or interpretation of this Agreement. This Agreement may be amended or modified, and the observance of any term of this Agreement may be waived, only by a writing signed by the Company and the Representatives.

22. **COUNTERPARTS.** This Agreement may be signed in any number of counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal E-SIGN Act of 2000, e.g., [www.docusign.com](http://www.docusign.com) or [www.echosign.com](http://www.echosign.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.

[SIGNATURE PAGE FOLLOWS]

If the foregoing is in accordance with your understanding please indicate your acceptance of this Agreement by signing in the space provided for that purpose below.

Very truly yours,

IKENA ONCOLOGY, INC.

By: /s/ Mark Manfredi

Name: Mark Manfredi, Ph.D.

Title: President and Chief Executive Officer

Accepted as of the date first above written:

COWEN AND COMPANY, LLC

WILLIAM BLAIR & COMPANY, L.L.C.

Acting on its own behalf and as Representatives of several Underwriters listed on Schedule A to this Agreement.

By: COWEN AND COMPANY, LLC

By: /s/ Mariel A. Healy

Name: Mariel A. Healy

Title: Managing Director

By: WILLIAM BLAIR & COMPANY, L.L.C.

By: /s/ Steve Maletzky

Name: Steve Maletzky

Title: Managing Director

SCHEDULE A

<u>Name</u>	<u>Number of Shares of Stock to be Purchased</u>
Cowen and Company, LLC	4,093,700
William Blair & Company, L.L.C.	1,405,300
H.C. Wainwright & Co., LLC	611,000
Total	<u>6,110,000</u>



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**SCHEDULE B**

General Use Free Writing Prospectuses

None

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**SCHEDULE C**

Pricing Prospectus

1. Prospectus dated May 15, 2023
2. Free writing prospectuses filed by the Company under Rule 433(d) of the Securities Act:  
None
3. Pricing Information:  
Stock to be Sold: 6,110,000 shares  
Public Offering Price: \$6.55 per share  
Underwriting Discounts and Commissions: 6.00%  
Estimated Net Proceeds to the Company (after underwriting discounts and commissions, but before transaction expenses): \$37,619,270  
Settlement: T+2

---

**SCHEDULE D**

- Mark Manfredi, Ph.D.
- Jotin Marango, M.D., Ph.D.
- Owen Hughes
- David Bonita, M.D.
- Iain D. Dukes, D. Phil.
- Jean-François Formela, M.D.
- Maria Koehler, M.D., Ph.D.
- Otello Stampacchia, Ph.D.
- Richard Wooster, Ph.D.
- OrbiMed Advisors LLC
- Atlas Venture Funds
- Omega Fund VI, L.P.

---

**SCHEDULE E**

1. Investor Presentation dated as of May 15, 2023

---

**Exhibit I**

[Form of Lock-Up Agreement]



Goodwin Procter LLP  
100 Northern Avenue  
Boston, MA 02210

goodwinlaw.com  
+1 617 570 1000

May 15, 2023

Ikena Oncology, Inc.  
645 Summer Street, Suite 101  
Boston, MA 02210

Re: Securities Registered under Registration Statement on Form S-3

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-3 (File No. 333-264517) (as amended or supplemented, the "Registration Statement") filed on April 27, 2022 with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration of the offer by Ikena Oncology, Inc., a Delaware corporation (the "Company"), of up to \$300,000,000 of any combination of securities of the types specified therein. The Registration Statement was declared effective by the Commission on May 5, 2022. Reference is made to our opinion letter dated April 27, 2022 and included as Exhibit 5.1 to the Registration Statement. We are delivering this supplemental opinion letter in connection with the prospectus supplement (the "Prospectus Supplement") filed on May 15, 2023 by the Company with the Commission pursuant to Rule 424 under the Securities Act. The Prospectus Supplement relates to the offering by the Company of 6,110,000 shares of the Company's common stock, par value \$0.001 per share (the "Shares"), covered by the Registration Statement. The Shares are being sold to the several underwriters named in, and pursuant to, an underwriting agreement among the Company and such underwriters (the "Underwriting Agreement").

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinion set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinion set forth below, on certificates of officers of the Company.

The opinion set forth below is limited to the Delaware General Corporation Law.

Based on the foregoing, we are of the opinion that the Shares have been duly authorized and, when delivered and paid for in accordance with the terms of the Underwriting Agreement, will be validly issued, fully paid and non-assessable.

---

Ikena Oncology, Inc.  
May 15, 2023  
Page 2

This opinion letter and the opinion it contains shall be interpreted in accordance with the Core Opinion Principles as published in *74 Business Lawyer* 815 (Summer 2019).

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement and to the references to our firm under the caption "Legal Matters" in the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ GOODWIN PROCTER LLP  
GOODWIN PROCTER LLP



**Ikena Oncology Reports First Quarter 2023 Financial Results and Highlights Advancements Across Targeted Oncology Pipeline**

*Lead targeted oncology program in Hippo pathway, IK-930, continues to advance through dose escalation with no dose-limiting toxicities observed to-date*

*Preclinical data at AACR Annual Meeting demonstrated IK-930 TEAD1 selectivity with equivalent activity to panTEAD inhibition and significantly improved therapeutic index*

*Differentiated MEK-RAF complex inhibitor profile of IK-595 presented at AACR Special Conference on Targeting RAS*

*Underwritten offering of \$40M extends runway into 2026*

BOSTON—May 15, 2023 —Ikena Oncology, Inc. (Nasdaq: IKNA, “Ikena”, “Company”), a targeted oncology company forging new territory in patient-directed cancer treatment, today announced financial results for the first quarter ended March 31, 2023. The Company also provided an update across the organization and pipeline.

“The start to 2023 has been full of exciting developments, including external clinical validation of the Hippo pathway and targeting TEAD. In addition to this de-risking event, we have been able to highlight our own differentiation in the space with IK-930’s unique selectivity profile, optimized therapeutic index, and broad applicability as both a monotherapy and in combination across several patient populations. As we continue to advance in the clinic, our ability to continuously dose patients will allow us to fully explore IK-930’s therapeutic potential,” commented Mark Manfredi, Ph.D., Chief Executive Officer of Ikena. “The first quarter also was the first time we shared the novel profile of IK-595, our MEK-RAF complex inhibitor. We designed IK-595 to optimize the potential therapeutic window and durably bind the RAFs, focusing on preventing multiple CRAF mechanisms that can cause tumorigenesis. Both of these programs are aiming to serve patient populations in which current approved and experimental therapies are insufficient or failing. That need is driving our entire team to continue delivering on development in the clinic, including the IK-595 IND filing and the initial IK-930 clinical data expected later this year.”

**Summary of Recent Pipeline Progress and Corporate Update**

***IK-930: TEAD1-Selective Hippo Pathway Inhibitor***

- IK-930 revealed as a TEAD1 selective inhibitor with significant advantages in therapeutic index at American Association for Cancer Research (AACR) Annual Meeting in April 2023
  - Multiple preclinical datasets comparing IK-930 to panTEAD inhibition presented, including nonhuman primate tolerability and comparable efficacy in multiple models
  - Data presented demonstrated that the combination of IK-930 and several targeted agents, including EGFR, KRAS G12C, and MEK inhibitors, showed a decrease in the development of drug-resistant persister cells, suggesting the potential of IK-930 to expand the number of patients who could benefit from these targeted therapies



- Initial clinical data from the monotherapy portion of the ongoing Phase 1 clinical trial of IK-930, including patients from the dose escalation cohorts and backfilling, is planned for the fourth quarter of 2023
  - The study continues to progress as planned through dose escalation with no reported dose-limiting toxicities to date
  - The protocol includes backfilling of cohorts at efficacious exposures in patients with NF2-deficient mesothelioma and epithelioid hemangioendothelioma (EHE)
  - The expansion cohorts of the trial will evaluate IK-930 as a monotherapy in these indications, as well as in other patients with solid tumors with detectable alterations in the Hippo pathway, including NF2 deficiency and YAP/TAZ alterations
- Combination cohorts in the IK-930 clinical program are planned based on emerging pharmacokinetic and pharmacodynamic data from monotherapy dose escalation; osimertinib is the first combination partner through a clinical collaboration with AstraZeneca
  - Preclinical data exemplified the potential of IK-930 in combination with osimertinib in EGFR mutant cancers, both in first line as a resistance-preventative combination and in later lines, post-resistance emergence
  - Additional combinations of IK-930 with MEK inhibitors and KRAS inhibitors have the potential to address resistance to and durability of targeted treatments in RAS mutant cancers

***IK-595: MEK-RAF Complex Inhibitor***

- Data presented at the AACR Special Conference on Targeting RAS demonstrated key differentiation characteristics of IK-595 from first and second generation MEK inhibitors including:
  - IK-595 traps MEK and RAF in an inactive complex to overcome CRAF bypass mechanism and block its kinase-independent activity, more durably and completely inhibiting RAS-MAPK signaling than existing inhibitors
  - The optimization of the half-life of IK-595 can enable dosing schedules to achieve plasma exposure above IC<sub>90</sub> to drive tumor cell killing, while allowing a break from target engagement for normal tissues to recover
- Investigational new drug (IND) application submission for IK-595 planned for the second half of 2023
  - Potential indications for the clinical program are being explored based on IK-595 sensitivity and unmet clinical need; indication models that have shown high sensitivity for IK-595 to date include:
    - NRAS mutant cancers, including melanoma, colorectal cancer, and acute myeloid leukemia
    - KRAS mutant cancers, including non-small cell lung, colorectal and pancreatic cancers, and



- CRAF altered cancers, which represent an orphan population with a high unmet need and a unique potential to benefit from IK-595's mechanism
- Additionally, IK-595 has been shown to be active as a monotherapy in many RAF models, including BRAF mutant cancers, and synergistic in combination with other targeted agents, including KRAS G12C, SHP2, SOS1, TEAD, EGFR, PI3K and mTOR inhibitors in various RAS mutant cancer cell lines

#### ***IK-175: AHR Inhibitor in Collaboration with Bristol Myers Squibb***

- In March 2023, the FDA granted Fast Track designation for IK-175, the Company's novel aryl hydrocarbon receptor (AHR) antagonist, in combination with immune checkpoint inhibitors, in patients with advanced urothelial carcinoma who have progressed on or within three months of receiving the last dose of checkpoint inhibitors
- The Phase 1 clinical trial in urothelial carcinoma has completed enrollment; treatment is ongoing and the program is eligible for opt-in from Bristol Myers Squibb through early 2024

#### ***Corporate Update***

- Today the Company announced the pricing of an underwritten offering for estimated gross proceeds of approximately \$40 million
- Together with its existing cash, cash equivalents, and investments, the Company believes that cash at hand will be sufficient to meet its operating requirements into 2026 and will fund additional data events for both IK-930 and IK-595 beyond the initial read outs

#### **Financial Results for the Quarter Ended March 31, 2023**

As of March 31, 2023, Ikena had \$137.8 million in cash, cash equivalents and marketable securities, which does not include proceeds from the recent underwritten offering that priced today.

Collaboration revenue was \$5.3 million and \$3.4 million for the three months ended March 31, 2023 and 2022, respectively. The increase in collaboration revenue was primarily due to the Company's decision to stop the IK-175 head and neck study.

Research and development expenses were \$15.6 million and \$14.3 million for the three months ended March 31, 2023 and 2022, respectively. The increase in research and development expenses of \$1.2 million was primarily related to personnel and overhead costs due to an increase in headcount, partially offset by a decrease in other discovery stage programs, as a result of the Company prioritizing its focus on advancing its clinical stage programs.

General and administrative expenses were \$5.3 million and \$6.0 million for the three months ended March 31, 2023 and 2022, respectively. The decrease in general and administrative expenses of \$0.7 million was primarily attributable to a decrease in legal, consulting, and insurance expenses.

#### **About Ikena Oncology**

Ikena Oncology™ is focused on developing differentiated therapies for patients in need that target nodes of cancer growth, spread, and therapeutic resistance in the Hippo and RAS onco-signaling network. The Company's lead targeted oncology program, IK-930, is a TEAD1 selective Hippo pathway inhibitor, a known tumor suppressor pathway that also drives resistance to multiple targeted therapies.



The Company's additional research spans other targets in the Hippo pathway as well as the RAS signaling pathway, including developing IK-595, a novel MEK-RAF inhibitor. Additionally, IK-175, an AHR antagonist, is being developed in collaboration with Bristol Myers Squibb. Ikena aims to utilize their depth of institutional knowledge and breadth of tools to efficiently develop the right drug using the right modality for the right patient. To learn more, visit [www.ikenaoncology.com](http://www.ikenaoncology.com) or follow us on Twitter and LinkedIn.

#### **Forward-Looking Statements**

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, without limitation, implied and express statements regarding: the anticipated use of proceeds from the underwritten offering, statements regarding the completion of the offering, the timing and advancement of our targeted oncology programs, including the timing of updates; our expectations regarding the therapeutic benefit of our targeted oncology programs; our ability to efficiently discover and develop product candidates; our ability to obtain and maintain regulatory approval of our product candidates; the implementation of our business model, expectations with respect to cash runway, and strategic plans for our business and product candidates. The words "may," "will," "could," "would," "should," "expect," "plan," "anticipate," "intend," "believe," "estimate," "predict," "project," "potential," "continue," "target" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Any forward-looking statements in this press release are based on management's current expectations and beliefs and are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this press release, including, without limitation, those risks and uncertainties related to the timing and advancement of our targeted oncology programs; our expectations regarding the therapeutic benefit of our targeted oncology programs; expectations regarding our new executive officer; our ability to efficiently discover and develop product candidates; the implementation of our business model, and strategic plans for our business and product candidates, the sufficiency of the Company's capital resources to fund operating expenses and capital expenditure requirements and the period in which such resources are expected to be available, and other factors discussed in the "Risk Factors" section of Ikena's Quarterly Report on Form 10-Q for the quarter ended March 31, 2023, which is on file with the SEC, as updated by any subsequent SEC filings. We caution you not to place undue reliance on any forward-looking statements, which speak only as of the date they are made. We disclaim any obligation to publicly update or revise any such statements to reflect any change in expectations or in events, conditions or circumstances on which any such statements may be based, or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements. Any forward-looking statements contained in this press release represent our views only as of the date hereof and should not be relied upon as representing its views as of any subsequent date. We explicitly disclaim any obligation to update any forward-looking statements.

#### **Investor Contact:**

Rebecca Cohen  
Ikena Oncology  
[rcohen@ikenaoncology.com](mailto:rcohen@ikenaoncology.com)



**Media Contact:**  
Luke Shiplo  
LifeSci Communications  
lshiplo@lifescicomms.com



Corporate Presentation

May 2023

## Developing Biology-Driven Medicines and Expanding the Impact of Targeted Oncology



We develop differentiated therapies for patients in need that target nodes of cancer growth, spread, and therapeutic resistance in the Hippo and RAS onco-signaling networks



Hippo Pathway



RAS Pathway

- Multiple ongoing clinical trials with **expected data readouts in the next 12 months**
- **Leaders in Hippo pathway** with clinical stage TEAD1 inhibitor **IK-930**
  - Initial monotherapy dose escalation data in all comers, mesothelioma, and EHE in 4Q 2023
  - Broad combination potential including in EGFRm and RASm cancers, starting with osimertinib in NSCLC
- **Novel MEK/RAF inhibitor IK-595** in IND-enabling studies
  - IND in 2H 2023 with broad potential across RAF and RAS mutant cancers
- BMS partnered program **IK-175** with **clinical activity in bladder cancer**
  - Potential for **\$50M in opt-in fees by early 2024**, \$450M in milestones plus global royalties
- Cash **runway into 2026**

# Seasoned Executive Team with 50+ INDs and 14 Regulatory Approvals



**23**  
average years  
of experience



**50+**  
INDs



**14**  
regulatory  
approvals

## Executive Team



**Mark Manfredi, Ph.D.**  
Chief Executive Officer



**Sergio Santillana, M.D.**  
Chief Medical Officer



**Jeffrey Ecsedy, Ph.D.**  
Chief Development Officer



**Michelle Zhang, Ph.D.**  
Chief Scientific Officer



**Jotin Marango, M.D., Ph.D.**  
Chief Financial Officer and  
Head of Corporate Development



## Board of Directors

**Owen Hughes**  
*Chair*



**Iain Dukes,**  
D.Phil.



**David Bonita,**  
M.D.



**Jean Francois Formela,**  
M.D.



**Otello Stampacchia,**  
Ph.D.



**Maria Koehler,**  
M.D., Ph.D.



**Richard Wooster,**  
Ph.D.



## Scientific Advisory Board

**George Demetri, M.D.**  
Professor, Medicine,  
Harvard Medical School  
Director, Center for  
Sarcoma and Bone Oncology,  
Dana-Farber Cancer Institute

**Kevan Shokat, Ph.D.**  
Professor and Chair,  
Department of Cellular and  
Molecular Pharmacology, UCSF  
Investigator, Howard Hughes  
Medical Institute

**Josep Tabernero, M.D., Ph.D.**  
Head of Medical Oncology,  
Vall d'Hebron University Hospital

**Neal Rosen, M.D., Ph.D.**  
Director, Center for Mechanism-  
Based Therapeutics and Chair,  
Medical Oncology, Memorial  
Sloan-Kettering Cancer Center

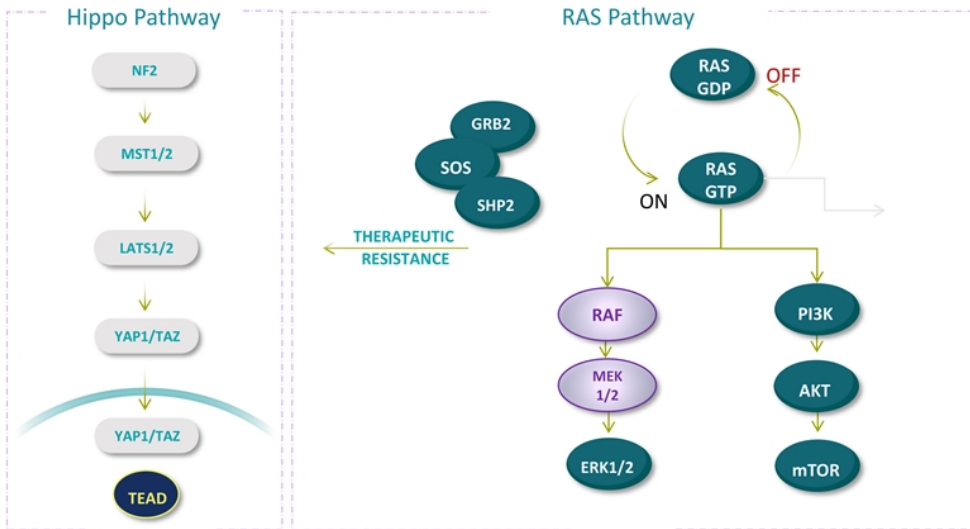
# Ikena Wholly-Owned Pipeline Focused on Targeted Oncology

	Candidate Target	Indications Interventions	Partnerships & Rights	Discovery	IND Enabling	Phase 1	Late-Stage Development	
Targeted Oncology	Hippo Pathway	<b>IK-930</b> TEAD	Hippo-Altered Cancers <i>Monotherapy &amp; Multiple Combinations</i>		—————◆—————			
		<b>Undisclosed</b>	Hippo-Altered Cancers		◆—————			
	RAS Pathway	<b>IK-595</b> MEK-RAF	RAS and RAF Altered Cancers; Additional Tumor Types		—————◆—————	◆—————		
		<b>Undisclosed</b>	RAS-Mutated Cancers		◆—————			
Immune-Signaling	AHR Signaling	<b>IK-175</b> AHR	Bladder Cancer, AHR Enriched <i>Monotherapy &amp; Nivolumab Combination</i>		—————◆—————			
			Head & Neck Cancer, AHR Enriched <i>Nivolumab Combination</i>			—————◆—————		



# Connectivity Across RAS & Hippo Oncosignaling Network

Nodes in the RAS network are intricately connected to each other and other orthogonal pathways, including Hippo



Hippo genetically-altered cancers and Hippo activated resistance

RASm cancers – one of the most common pathway with genetic alteration in cancers – potential benefit from monotherapies and combination therapies

*Ikena has deep institutional knowledge and broad capabilities that lay the foundation for discovery programs across the network*

Deep knowledge and characterization of the interconnected nature of oncogenic nodes

Proven history of drugging difficult targets

Leaders in drugging the Hippo pathway

Advanced capabilities across biomolecular characterization, structural biology, chemistry, and translational medicine

# Targeting TEAD & the Hippo Pathway

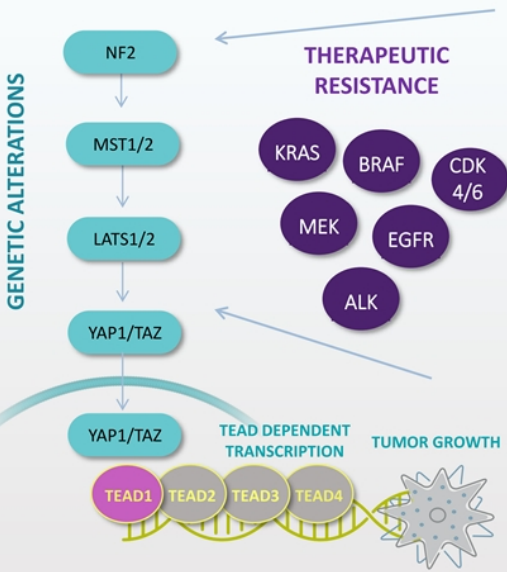
IK-930



# IK-930 Well-Positioned to Address Diverse Patient Populations with High Unmet Need

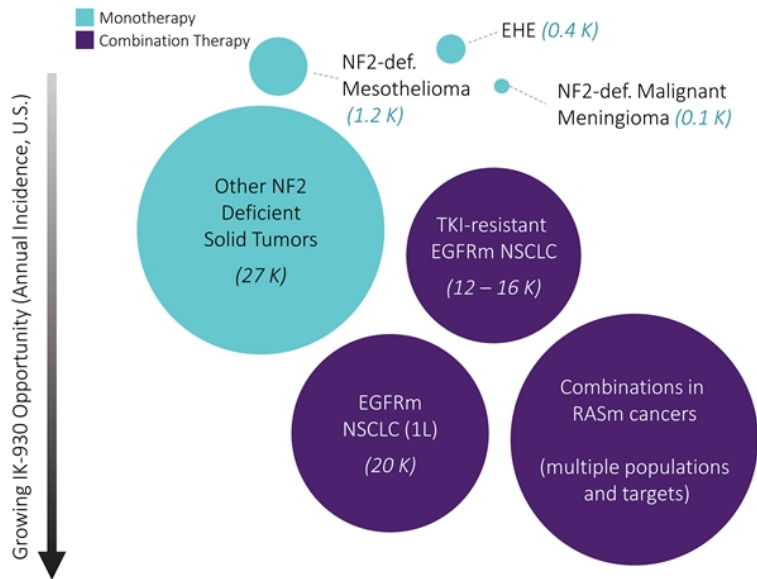
Two distinct mechanisms: Genetic alterations in Hippo pathway and pathway involvement in therapeutic resistance

## Hippo Pathway Activity Triggers TEAD Transcription-Dependent Tumor Growth



EHE: Epithelioid Hemangioendothelioma; MPM: Malignant Pleural Mesothelioma.

## IK-930 Initial Target Patient Populations



Additional potential opportunities in YAP/TAZ amplified cancers and combinations with RAS pathway agents (MEKi, KRASi)

# IK-930 is Potentially both First and Best in Class Targeting Hippo Pathway

*IK-930 is a potent Hippo-pathway inhibitor that selectively inhibits TEAD1 and broadly represses oncogenic TEAD activity*

## IK-930 is a TEAD1 Selective Palmitoylation Inhibitor

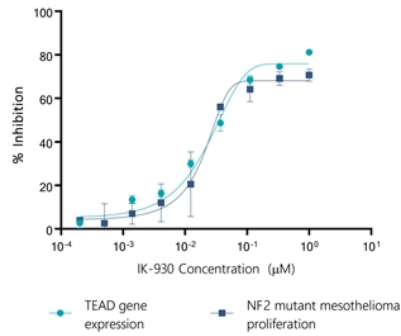
### IK-930

	TEAD1	TEAD2	TEAD3	TEAD4
FP (IC <sub>50</sub> μM)	0.88 ± 0.22	9.23 ± 1.80	> 50	6.58 ± 0.93
Click/Chem(IC <sub>50</sub> μM)	0.2-0.5	>20	>20	>20
TSA (Kd; μM)	0.32	2.47	/	17.85
Nanobret (IC <sub>50</sub> μM)	0.091 ± .002	15.53 ± 1.32	> 20	> 20

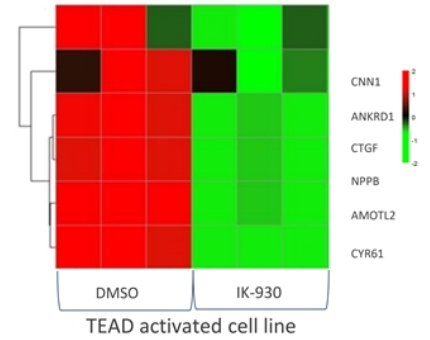
### Pan-TEADi

	TEAD1	TEAD2	TEAD3	TEAD4
FP (IC <sub>50</sub> μM)	0.92 ± 0.25	2.29 ± 0.51	1.18 ± 0.52	1.38 ± 0.58
Click/Chem(IC <sub>50</sub> μM)	0.2-0.5	2	0.5	2
TSA (Kd; μM)	0.18	1.77	42.82	0.19
Nanobret (IC <sub>50</sub> μM)	0.030 ± .004	0.51 ± .022	0.041 ± .001	0.32 ± .081

## Potent Inhibition of TEAD

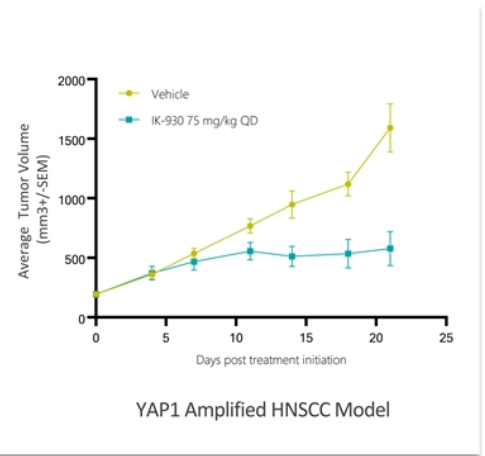
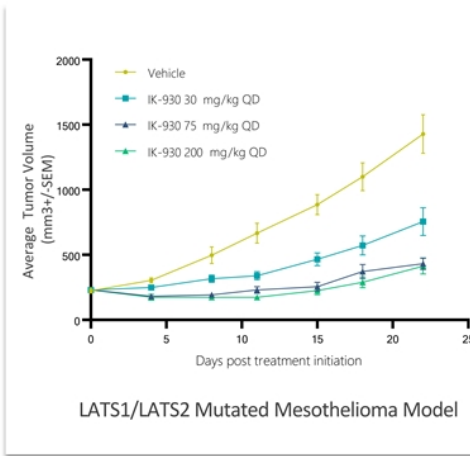
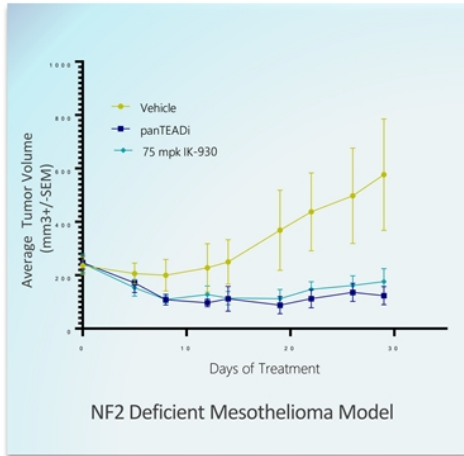


## Robust Inhibition TEAD Target Gene Expression



# IK-930 Monotherapy Has Potential Across Genetic Mutations in the Hippo Pathway

Comparable to panTEADi in NF2 Deficient Mesothelioma with Impact Across Tumor Models for Hippo Pathways Genetic Alterations



# IK-930 Mechanism Drives TEAD1 into Tumor-Repressive Activity

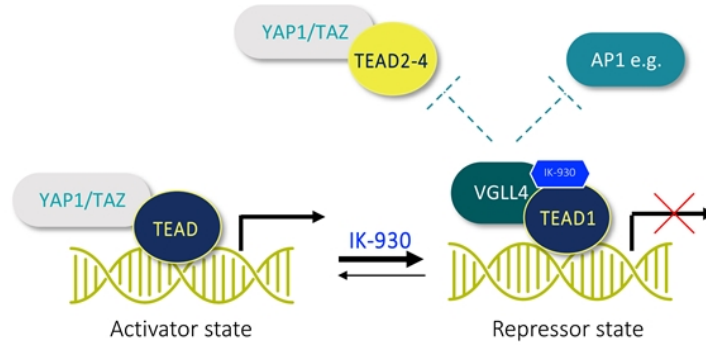
Leveraging the two opposing states of TEAD through binding TEAD1 to inhibit palmitoylation and promoting VGLL4 interactions

## Two Opposing States of TEAD

Activator with YAP1 or TAZ (palmitoylation dependent)

Repressor with VGLL4 (palmitoylation independent)

## IK-930 Leverages the TEAD Biology to Gain Repressive Activity from Both State



IK-930-TEAD1-VGLL4 complex blocks chromatin access for TEADs and other transcriptional activators

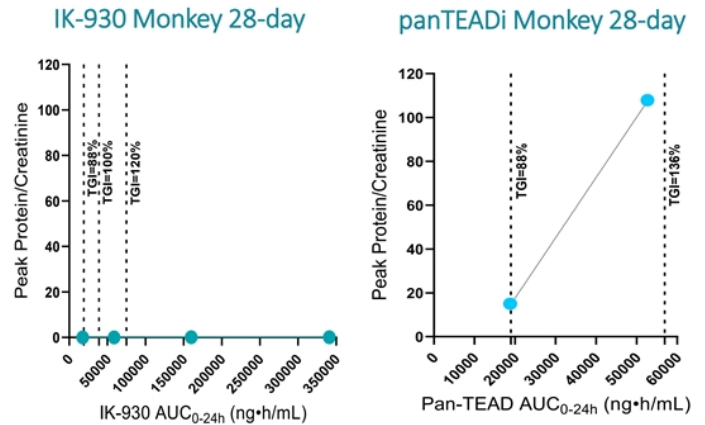
## IK-930 Is Designed to Balance Efficacy and On-Target TEAD Renal Tox

Prior attempts to target the Hippo pathway have not been able to balance anti-tumor activity and kidney toxicity

### Designing a Targeted Treatment to Maximize Antitumor Activity and Minimize On-Target Tox

- panTEAD inhibition has been seen to drive proteinuria and frank kidney toxicity (Kaneda et al, AACR 2019)
- In preclinical models it has been seen that YAP1 is required for podocyte (highly specialized kidney cell) viability (Schwartzman et al., 2016)
- IK-930's selectivity provide a far wider potential therapeutic window while demonstrating equivalent activity in multiple in vivo models
- 28-Day Monkey Study**
  - IK-930: No clinical signs or renal changes observed; all doses**
    - No toxicity to other systems
  - panTEADi
    - Decreased activity, ataxia observed in both dose groups
    - High dose halted on day 18 due to mortality and morbidity

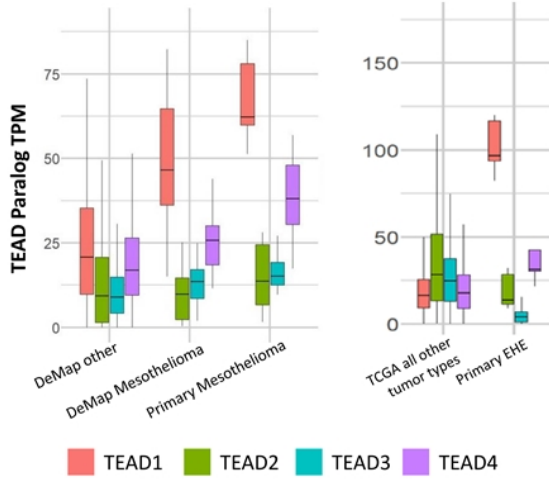
### IK-930 Does Not Result in Proteinuria at All Tested Doses in Monkeys, in Contrast to panTEAD Inhibition



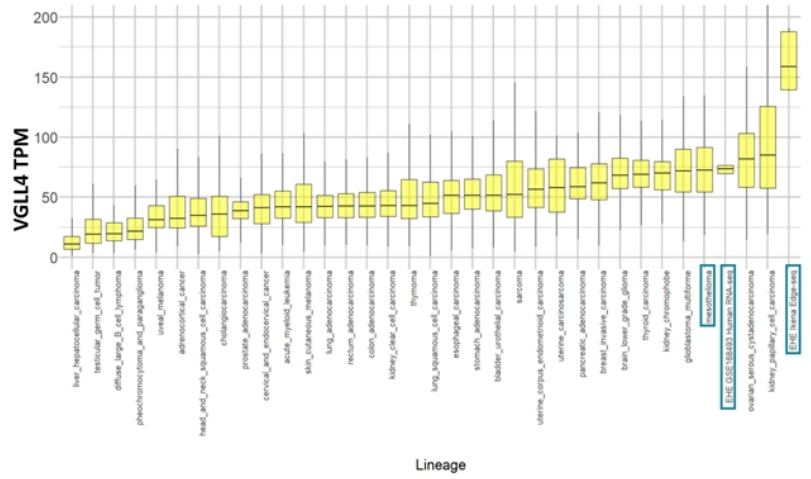
Average urinary protein-to-creatinine ratios and histopathology in non-human primates predicted a **therapeutic index of less than one** for panTEAD inhibitors and a **broad therapeutic window** for IK-930

# TEAD1 and VGLL4 are Highly Expressed in IK-930's Initial Target Indications

TEAD1 is the Most Highly Expressed Paralog in Mesothelioma and EHE



Mesothelioma and EHE Have High Expression of VGLL4





# IK-930 Monotherapy Clinical Strategy; Initial Data Expected in 4Q 2023

## Growing Monotherapy Opportunity

~125,000 newly diagnosed cancer patients per year in the US with known Hippo pathway mutations and alteration



- **Malignant Mesothelioma:** ~40% NF2 loss of function mutations
- **NSCLC:** 6% YAP1 and 29% TAZ amplification
- **Meningioma:** High frequency of NF2 deficiency; Most common CNS tumor, accounting for ~one-third of primary CNS tumors
- **Head & Neck Cancers:** Growing body of knowledge on frequent YAP/TAZ amplification and FAT1 (upstream) deficiency
- **Soft Tissue Sarcomas:** ~90% of epithelioid hemangioendothelioma, or **EHE**, have TAZ-CAMTA1 fusions; 10% of EHE have YAP1-TFE3 fusions

## Ongoing Phase 1 Trial Monotherapy Clinical Development Plan

Dose Escalation

Currently recruiting;  
advanced through  
multiple doses

All comers

Tumors known to have high  
incidence of Hippo pathway  
alterations

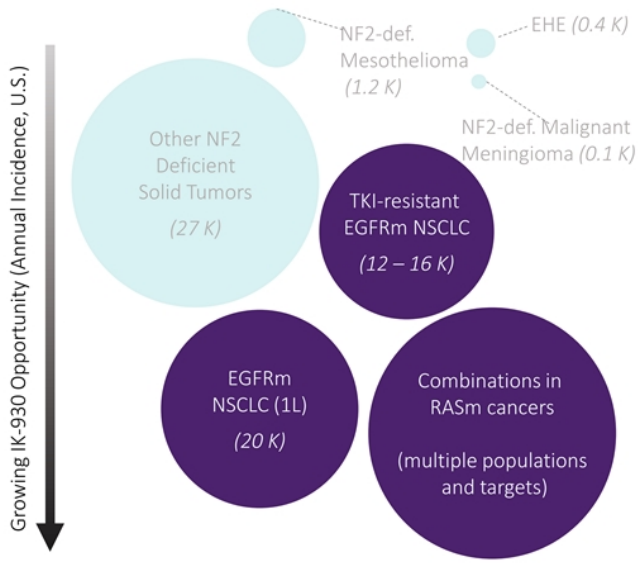
Dose Expansion Options

- NF2 deficient mesothelioma
- Epithelioid hemangioendothelioma (EHE)
- NF2 deficient solid tumors; agnostic approach
- YAP/TAZ gene fusion solid tumors; agnostic approach

# The Hippo Pathways is Implicated in Resistance to Multiple Targeted Therapies

IK-930 has the potential to combat resistance and expand the number of patients that could benefit from targeted therapies

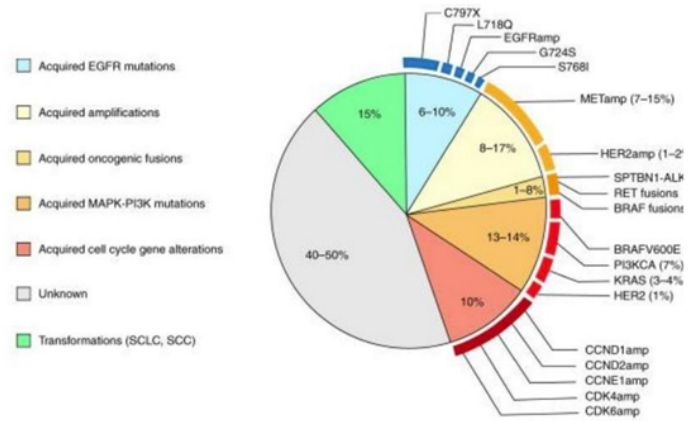
## Combating Therapeutic Resistance is a Major Need



## Case Study: Resistance Mechanisms to Osi in EGFRm NSCLC

40%+ of patients with Osimertinib resistance have unidentified mechanisms and represent a significant unmet need

Leonetti, et al., Br J Cancer, 2019

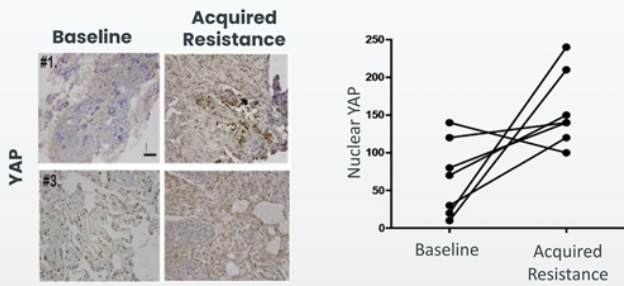


*“The biggest hurdle to targeted cancer therapy is the inevitable emergence of drug resistance.”*

Lim, et al. Journal of Hematology & Oncology 2019

# IK-930 Opportunity to Address Emerging Early-Use Osimertinib Resistance

## YAP Nuclear Localization Post Osi Treatment Linked to Acquired Resistance



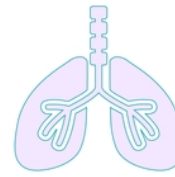
Lee, et al., BBRC, 2016

There is a growing body of data linking the Hippo pathway to resistance to multiple targeted therapies, including osimertinib

## Two Clinical Opportunities in EGFR Resistance

### First Line Combo with Osi

First line osi combined with IK-930 to potentially prevent the emergence of resistance



### Post Resistance Emergence

Treating with IK-930 post the emergence of resistance – negatively selecting for actionable mutations

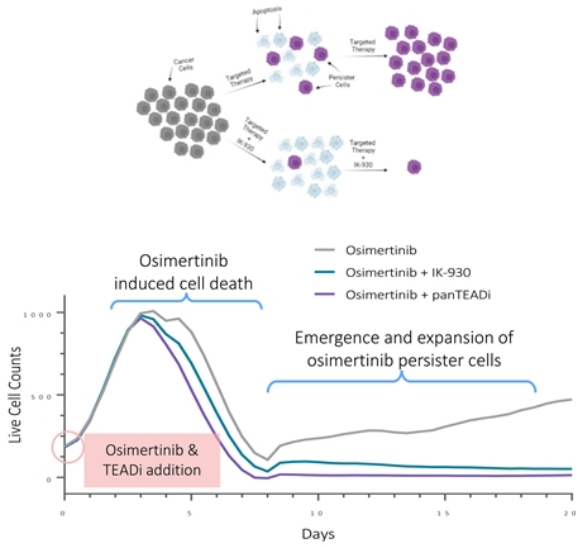
*Exploring both as potential paths in clinical program*

*Clinical supply agreement with AstraZeneca for osimertinib signed in 2022; first combo planned for clinical program*

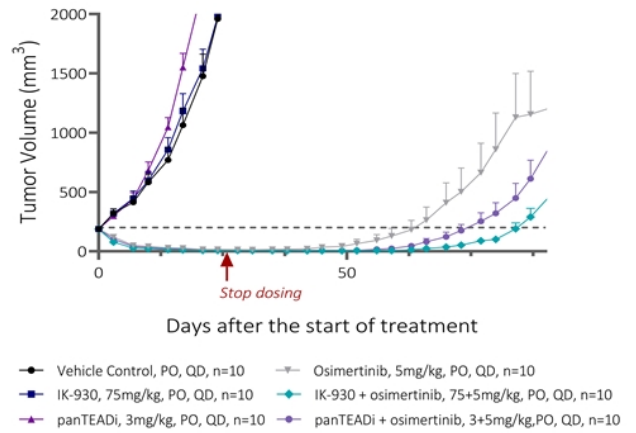
# IK-930-Osi Combo Delays Tumor Regrowth *in vivo* and Can Prevent Emergence of *Persisters*

Potential for IK-930 to *prevent* resistance to EGFR inhibitors and even *reverse* the effect when given after resistance has already emerged

## IK-930 Delays Emergence of Osi-Resistance *Persisters* Comparably to panTEADi



## IK-930 + Osi Delays Tumor Regrowth More than panTEADi *in vivo*

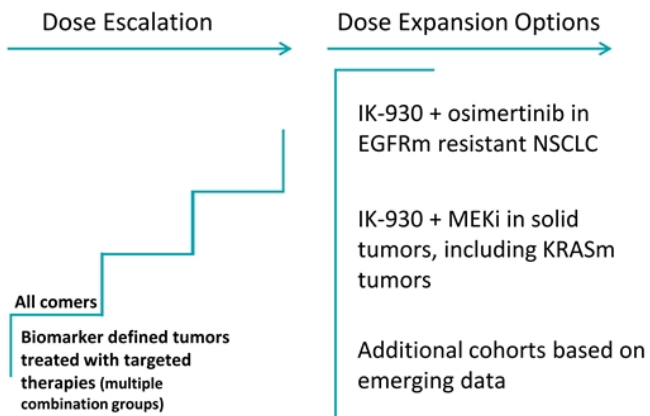


- Vehicle Control, PO, QD, n=10
- IK-930, 75mg/kg, PO, QD, n=10
- ▲ panTEADi, 3mg/kg, PO, QD, n=10
- ▴ Osimertinib, 5mg/kg, PO, QD, n=10
- ◆ IK-930 + osimertinib, 75+5mg/kg, PO, QD, n=10
- panTEADi + osimertinib, 3+5mg/kg, PO, QD, n=10

# IK-930's Potential to Combat Therapeutic Resistance to Other Targeted Therapies

Combination strategy represents an independent mechanism and potential opportunity for IK-930

## Combination Clinical Development Plan First Cohort to Initiate in 2023



## Addressing a Leading Limitation of Targeted Therapy - Primary and Secondary Therapeutic Resistance

**Resistance to multiple targeted therapies** and tumor recurrence can be linked to **YAP/TEAD activation**

Overcoming resistance mechanisms and escape could **deepen and prolong responses and address *de novo* resistance**, allowing more patients to respond to target therapies overall

## Ikena Leads the Field in Targeting the Hippo Pathway



- **IK-930**: First-in-class, paralog-selective TEAD inhibitor
  - Ongoing phase 1 clinical trial currently in dose escalation
    - Monotherapy cohorts in NF2 mutant mesothelioma and EHE (100% YAP/TAZ)
    - Multiple planned combination cohorts combating therapeutic resistance
      - Data shows potential to prevent and reverse resistance to EGFR inhibitors
  - **Additional data on advantages of paralog-selectivity and combination approach presented at AACR 2023**
  - **Initial clinical data expected in 4Q 2023**
- **Additional research in Hippo pathway leading next-gen efforts**

# MEK-RAF Complex Inhibitor

IK-595



# The RAS Pathway is Highly Implicated in Cancer

Targeting within the pathway could be impactful for a massive and diverse population

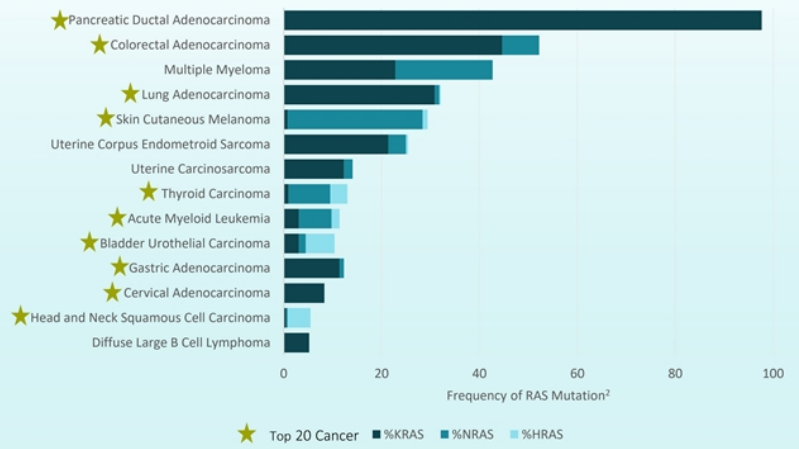
The **RAS pathway** is potentially implicated in **over half a million new cancer diagnoses each year** in the US alone<sup>1</sup>

New approaches in targeting the pathway need to consider key learnings

- Approved inhibitors can paradoxically activate MEK/ERK signaling
- CRAF is implicated as a key signaling bypass mechanism for targeted therapies, and has kinase independent activity that drives RAS mutant cancers

<sup>1</sup>ACS and <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3457779/>  
<sup>2</sup>Cox. Nature Reviews Drug Discovery (2014); World Cancer Research Fund International

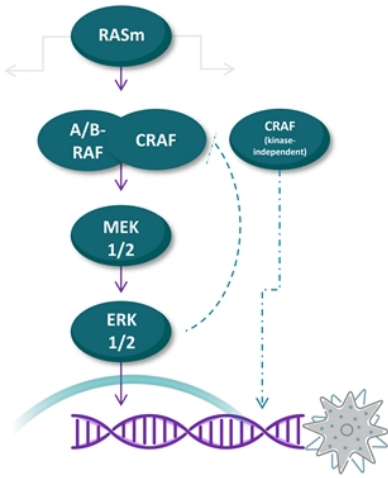
## 10 of the 20 most common cancers worldwide are associated with RAS pathway mutations



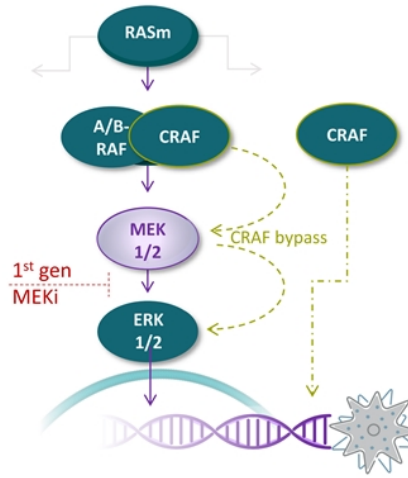


# First Generation MEK Inhibitors: Insufficient Targeting Leads to Limited Activity

**MEK's role in driving ERK-mediated tumor growth**



**First gen MEK inhibitors trigger CRAF mediated pathway reactivation**



Approved MEK inhibitors like trametinib and binimetinib block MEK kinase activity

Feedback in the pathway however triggers CRAF activation

Cancer's survival mechanism utilizes CRAF to reactivate the pathway and bypass inhibition

Additionally, approved inhibitors miss blocking kinase-independent CRAF function that can trigger tumor growth

Leads to incomplete pathway inhibition

## IK-595: A Best-in-Class Dual MEK-RAF Complex Inhibitor

IK-595 traps MEK & RAF in an inactive complex to prevent CRAF bypass and kinase-independent CRAF function



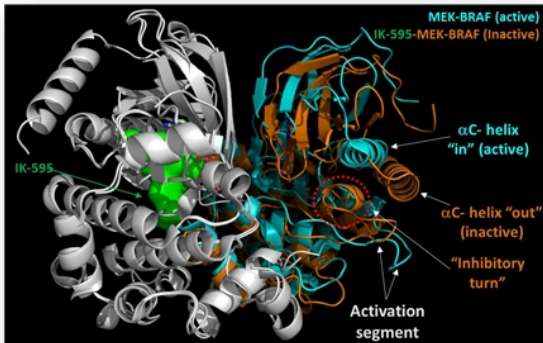
### Key IK-595 Advantages

IK-595 is designed to and has shown preclinical evidence of superior profile than first generation and in-development MEK inhibitors

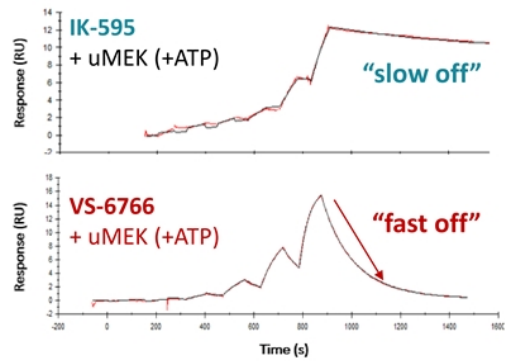
- ✓ Inhibit MEK mediated ERK1/2 phosphorylation
- ✓ Prevent MEK phosphorylation by RAF
- ✓ Alleviate therapeutic resistance through CRAF mediated bypass and pathway reactivation
- ✓ Block CRAF kinase independent activities
- ✓ Optimized PK profile to target IC90 plasma concentrations widening the therapeutic window

## Key Advantages of IK-595 Including Robust Stabilization of MEK-RAF Complex

IK-595 traps RAF and MEK in a stable, inactive complex providing advantages in blocking both bypass in the pathway and kinase-independent CRAF function



IK-595 binds to MEK with much slower off-rate kinetics compared to other assets with similar MoA

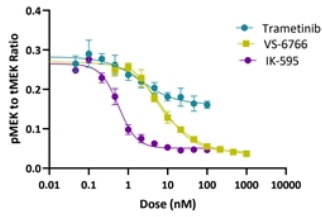


MEK	On Rate ( $M^{-1}s^{-1}$ )	Off Rate ( $s^{-1}$ )	Affinity (nM)
IK-595 (to MEK)	8.24 E+04	6.09 E-04	7.39
VS-6766 (to MEK)	1.69 E+05	7.08 E-03	41.83

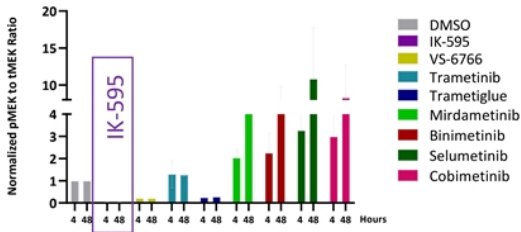
# IK-595 Leads to More Durable Pathway Suppression than Other MEK Inhibitors

## IK-595 Potently Inhibits MEK Phosphorylation In Vitro

*In vitro* MEK Phosphorylation (AsPC-1 cells)

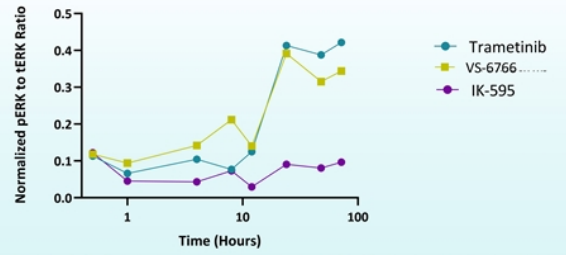


*In vitro* MEK Phosphorylation (HCT116 cells)

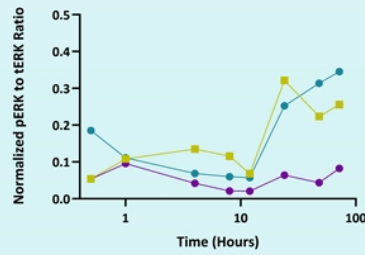


## IK-595 Demonstrates Robust and Prolonged pERK Inhibition in Multiple Cell Lines

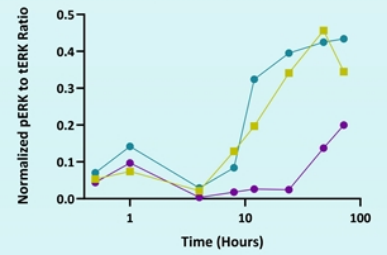
AsPC1 (KRASmut Pancreatic)



NCI-H2122 (KRASmut Lung)

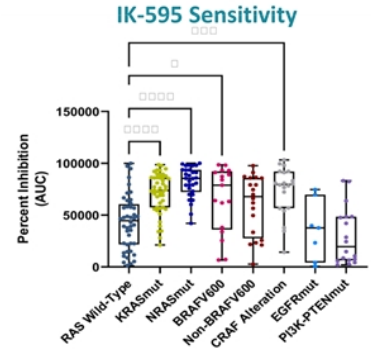
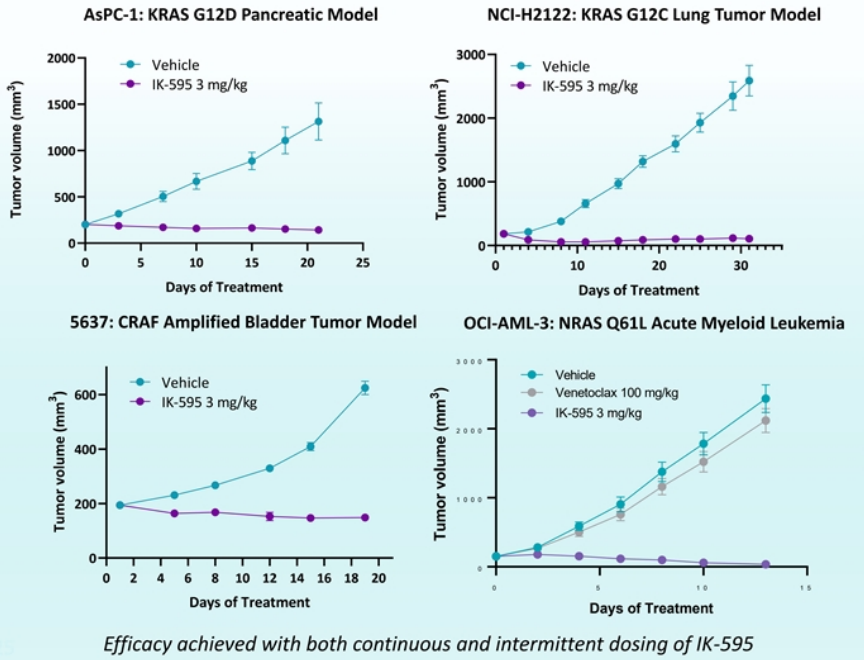


5637 (CRAF Amplified Bladder)



# Robust Efficacy in RAS & RAF Models; High Sensitivity in CRAF Dependent Models

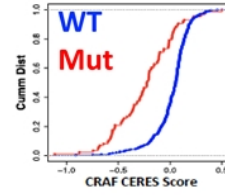
## Antitumor Activity Across Models at Tolerated IK-595 Doses



IK-595 has greatest sensitivity in NRAS and KRAS mutant cell lines which are dependent on CRAF

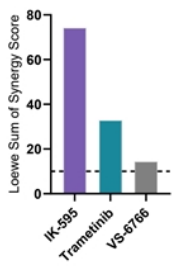
### NRAS and KRAS – CRAF CERES Score

Jones, 4th RAS-Targeted Drug Development Summit 2022

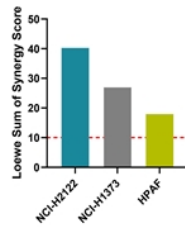


## IK-595 shows Significant Synergy Levels with Multiple Combination Agents

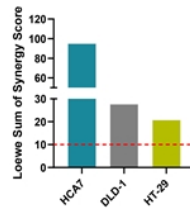
KRAS G12C (Sotorasib)



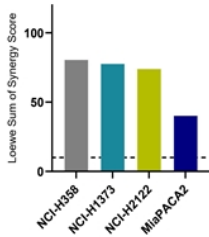
P13K (Inavolisib)



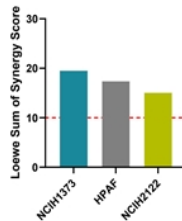
EGFR (Cetuximab)



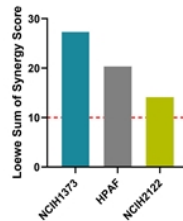
KRAS G12C (Adagrasib)



SOS1 (BI-3406)



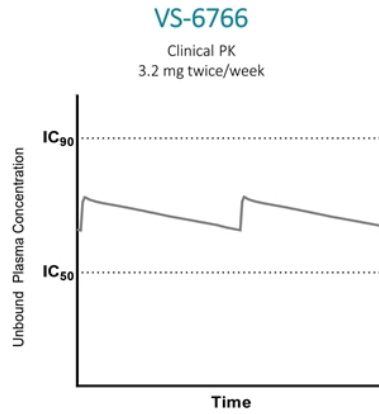
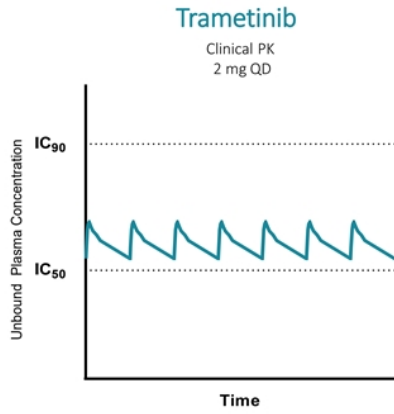
SHP2 (RMC-4550)



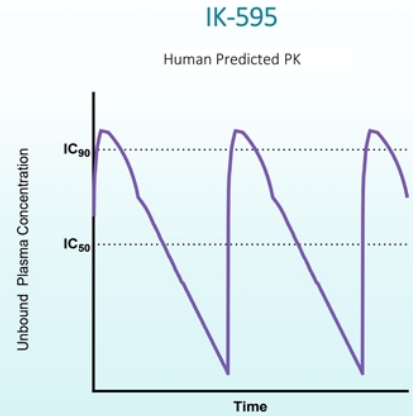
- High synergy scores show the potential for future potential combinations for IK-595
- Demonstrated the potential for expansion to larger patient populations within the RAS pathway
- Also shows potential to address needs in cancer populations where primary mutations fall outside the pathway but engage RAS biology

## IK-595 Designed for Therapeutic Index Optimization

$T_{1/2}$  optimized to enable dosing schedules to hit above  $IC_{90}$  and achieve impact while allowing for holiday



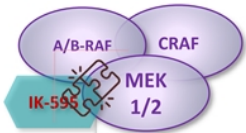
Clinical doses of trametinib and VS-6766 do not reach plasma concentrations above pERK  $IC_{90}$  due to the very long human  $T_{1/2}$  of trametinib (72-120 hrs) and VS-6766 (60-100 hrs)



Shorter human  $T_{1/2}$  of IK-595 allows flexibility in dosing schedules

Enables transient plasma concentrations above  $IC_{90}$  & recovery before next dose

## IK-595: Best-in-Class Next Generation MEK-RAF Complex Inhibitor



- Novel, best-in-class inhibitor that traps MEK and RAF in an inactive complex for more complete inhibition of the pathway
- Durable, potent inhibition of the pathway demonstrated through multiple data sets
- Mechanisms prevents CRAF bypass and kinase-independent CRAF function
- Preclinical efficacy in multiple disease models
- Difficult to treat CRAF-dependent tumors show high sensitivity to IK-595 in cell lines
- Designed with half life for optimization of therapeutic index and flexible dosing schedules
- **IND planned for 2H 2023**



# Targeting AHR to Counter Immunosuppressive TME

IK-175

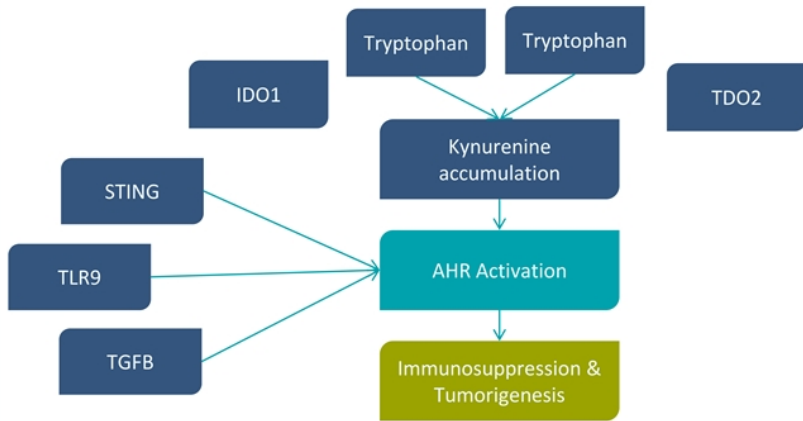
 Bristol Myers Squibb™



 ikena  
ONCOLOGY

# AHR's Role in Immune Signaling & Identifying Bladder Cancer as Key Population

Activated AHR can prevent immune recognition of cancer through both the innate and adaptive immune systems



AHR modulates activity in both the innate and adaptive immune systems

## Novel Assays to Optimize Indication Selection



Proprietary transcriptional signature

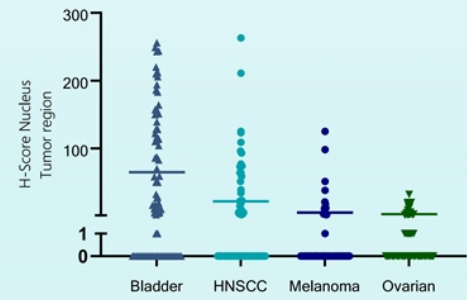


Gene amplification



Proprietary IHC

### Tumor Microarray Result



# IK-175 Ph1 Study Ongoing in Urothelial Carcinoma Patients

Patients have exhausted SOC and progressed on CPIs

Clinical data presented at SITC 2022 including dose escalation (all-comers), and both mono and combo stage 1 expansion cohorts in urothelial carcinoma

- 43 total patients; 40 evaluable for anti-tumor activity
- 20 dose escalation
- 20 dose expansion (10 mono, 10 combo)

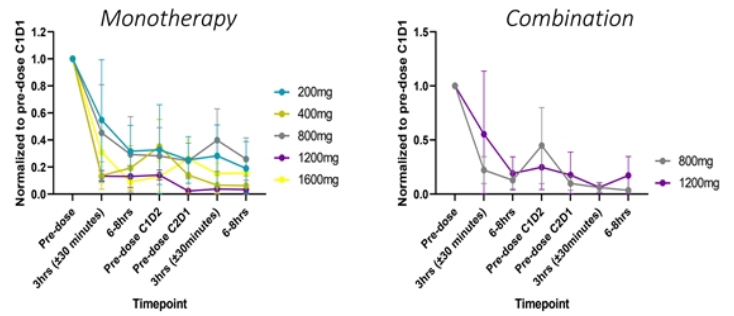
Pharmacodynamics seen at all doses

No DLTs observed

**IK-175 was well tolerated with a predictable and manageable safety profile**

**Encouraging anti-tumor activity and duration of response seen in IK-175 nivolumab combination expansion cohort**

## Pharmacodynamics at All Doses



## Last-line, Heavily Pre-treated Patients

Demographics of Evaluable Urothelial Carcinoma Patients in Initial Clinical Analysis

	Monotherapy (n=10)	Combination (n=10)
<b>Prior lines of anti-cancer therapy</b>		
1-3	2	4
4-10	8	6
<b>ADC experienced</b>	9	6

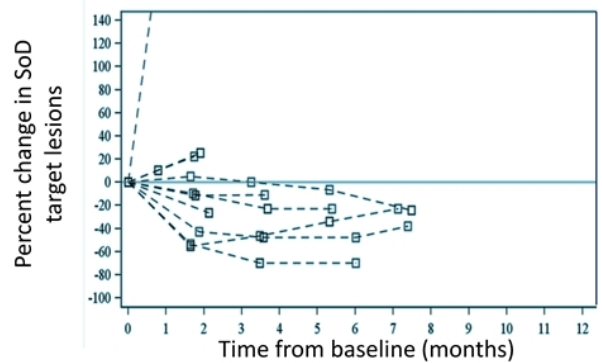
# Initial Clinical Urothelial Carcinoma Data Demonstrated Encouraging Anti-Tumor Activity

Clear evidence of monotherapy activity contributing to combination responses  
 Heavily pretreated patients exhausted all options -- failed checkpoints and have had up to 10 prior lines of therapy  
 Mono partial response ongoing over 15 months; Combo partial responses ongoing over 5 months

## Initial Clinical Data from Stage 1 of Expansion Cohorts

	Monotherapy (n=10)	Combination (n=10)
<b>Best overall response</b>		
Confirmed partial response	1 (10%)	2 (20%)
Stable Disease	1 (10%)	2 (20%)
Progressive disease	6 (60%)	6 (60%)
<b>ORR, n(%)</b>	1 (10%)	2 (20%)
<b>DCR, n(%)</b>	2 (20%)	4 (40%)

## Stage 1 of Combination Cohort in Urothelial Carcinoma Showed 40% DCR with Encouraging Anti-Tumor Activity



Combo result represent meaningful potential for patient population with significant and ongoing DoR  
 Stage 2 of expansion cohorts ongoing

# Ikena Wholly Owned Pipeline Focused on Targeted Oncology

	Candidate Target	Indications Interventions	Partnerships & Rights	Discovery	IND Enabling	Phase 1	Upcoming Milestone	
Targeted Oncology	Hippo Pathway	IK-930 TEAD	Hippo-Altered Cancers <i>Monotherapy &amp; Multiple Combinations</i>		—————◆			Initial data expected 4Q 2023
		Undisclosed	Hippo-Altered Cancers		◆			Progressing further pathway research
	RAS Pathway	IK-595 MEK-RAF	RAS and RAF Altered Cancers; Additional Tumor Types		—————◆			IND in 2H 2023
		Undisclosed	RAS-Mutated Cancers		◆			Progressing research toward add'l candidate
Immune-Signaling	AHR Signaling	IK-175 AHR	Bladder Cancer, AHR Enriched <i>Monotherapy &amp; Nivolumab Combination</i>		—————◆			Continued trial progress; update in 2H 2023
			Head & Neck Cancer, AHR Enriched <i>Nivolumab Combination</i>			—————◆		



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### **Ikena Oncology Announces \$40 Million Underwritten Offering**

BOSTON—May 15, 2023—Ikena Oncology, Inc. (Nasdaq: IKNA, “Ikena”, “Company”), a targeted oncology company forging new territory in patient-directed cancer treatment, announced today the pricing of an underwritten offering of 6,110,000 shares of common stock (the “Shares”) at an offering price of \$6.550 per share. The gross proceeds to the Company, before deducting the underwriting discounts and commissions and estimated offering expenses, are expected to be approximately \$40 million. The offering is expected to close on or about May 17, 2023, subject to satisfaction of customary closing conditions. The Company anticipates the net proceeds of the offering, together with existing cash, cash equivalents and investments, to further its ongoing clinical development of targeted oncology programs and advance them to clinical data read outs beyond the initial data for the monotherapy portion of the ongoing IK-930 Phase 1 clinical trial in the fourth quarter of 2023 and initial clinical data for IK-595, in addition to working capital, capital expenditures and other general corporate purposes. The financing was co-led by a new healthcare dedicated investor and included additional new investors, Acuta Capital Partners, Adage Capital, and Vestal Point Capital, as well as participation from existing investors.

TD Cowen and William Blair are acting as joint book-runners for the offering and H.C. Wainwright & Co. is acting as lead manager for the offering.

A shelf registration statement on Form S-3 (File No. 333-264517) relating to the offering of the securities described above was filed with the Securities and Exchange Commission (“SEC”) on April 27, 2022 and became effective on May 5, 2022. The offering is being made only by means of a prospectus, including a prospectus supplement, forming a part of an effective registration statement. A prospectus supplement and accompanying prospectus relating to the shares of common stock being offered was filed with the SEC on May 15, 2023. Copies of the prospectus supplement and accompanying prospectus relating to the offering may be obtained on the SEC’s website at <http://www.sec.gov> or from Cowen and Company, L.L.C., Attn: Cowen and Company, L.L.C., 599 Lexington Avenue, New York, NY 10022, by email at [Prospectus\\_ECM@cowen.com](mailto:Prospectus_ECM@cowen.com) or by telephone at (833) 297-2926. These copies may also be obtained by contacting William Blair & Company, L.L.C. at 150 North Riverside Plaza, Chicago, Illinois 60606, Attention: Prospectus Department, by telephone at (800) 621-0687, or by email at [prospectus@williamblair.com](mailto:prospectus@williamblair.com).

This press release shall not constitute an offer to sell or a solicitation of an offer to buy these securities, nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

#### **About Ikena Oncology**

Ikena Oncology™ is focused on developing differentiated therapies for patients in need that target nodes of cancer growth, spread, and therapeutic resistance in the Hippo and RAS onco-signaling network. The Company’s lead targeted oncology program, IK-930, is a TEAD1 selective Hippo pathway inhibitor, a known tumor suppressor pathway that also drives resistance to multiple targeted therapies. The Company’s additional research spans other targets in the Hippo pathway as well as the RAS signaling pathway, including developing IK-595, a novel MEK-RAF inhibitor. Additionally, IK-175, an AHR antagonist, is being developed in collaboration with Bristol Myers Squibb. Ikena aims to utilize their depth of institutional knowledge and breadth of tools to efficiently develop the right drug using the right modality for the right patient. To learn more, visit [www.ikenaoncology.com](http://www.ikenaoncology.com) or follow us on Twitter and LinkedIn.



#### **Forward Looking Statements**

This press release contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, that involve risks and uncertainty. Such statements are based on management’s current expectations and are subject to a number of risks and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. The Company cautions investors that there can be no assurance that actual results will not differ materially from those projected or suggested in such forward-looking statements as a result of various factors. The words “may,” “will,” “could,” “would,” “should,” “expect,” “plan,” “anticipate,” “intend,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue,” “target” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statements include, but are not limited to, the Company’s expectations regarding the completion of the offering. Important factors that could cause actual results to differ significantly from those expressed or implied by such forward-looking statements include, but are not limited to: risks and uncertainties related to market and other conditions and the satisfaction of customary closing conditions related to the offering. A further list and description of these and other factors, risks and uncertainties can be found in the “Risk Factors” section of the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2023, which is on file, which we filed with the Securities and Exchange Commission on May 15, 2023, the prospectus supplement related to this offering and subsequent filings. Forward-looking statements represent the Company’s views only as of today and should not be relied upon as representing its views as of any subsequent date. The Company explicitly disclaim any obligation to update any forward-looking statements.

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