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

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**FORM S-3  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

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**CTI BIOPHARMA CORP.**  
(Exact name of registrant as specified in its charter)

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Delaware  
(State or other jurisdiction of  
incorporation or organization)

91-1533912  
(I.R.S. Employer  
Identification No.)

3101 Western Avenue, Suite 800  
Seattle, Washington 98121  
(206) 282-7100

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

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Adam Craig, M.D., Ph.D.  
President, Chief Executive Officer and Interim Chief Medical Officer  
CTI BioPharma Corp.  
3101 Western Avenue, Suite 800  
Seattle, Washington 98121  
(206) 282-7100

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Copies to:*

Ryan A. Murr  
Branden C. Berns  
Gibson, Dunn & Crutcher LLP  
555 Mission Street  
San Francisco, CA 94105-0921  
(415) 393-8373

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**Approximate date of commencement of proposed sale to the public:**  
From time to time after the effective date of this registration statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

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

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

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

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 7(a)(2)(B) of the Securities Act.

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

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## EXPLANATORY NOTE

This registration statement contains the following documents:

- a base prospectus, which covers the offering, issuance and sale by us of up to a maximum aggregate offering price of \$200,000,000 of the securities identified above from time to time in one or more offerings; and
- a sales agreement prospectus supplement, which covers the offering, issuance and sale by us of up to a maximum aggregate offering price of \$100,000,000 of our common stock that may be issued and sold under the Open Market Sale Agreement, dated August 16, 2022 (the “Sale Agreement”), with Jefferies LLC.

The base prospectus immediately follows this explanatory note. The specific terms of any securities to be offered pursuant to the base prospectus other than the shares under the Sale Agreement will be specified in a prospectus supplement to the base prospectus. The specific terms of the securities to be issued and sold under the Sale Agreement are specified in the Sale Agreement prospectus supplement that immediately follows the base prospectus. The \$100,000,000 shares of common stock that may be offered, issued and sold under the Sale Agreement prospectus supplement is included in the \$200,000,000 of securities that may be offered, issued and sold by the registrant under the base prospectus. Upon termination of the Sale Agreement, any portion of the \$100,000,000 included in the Sale Agreement prospectus supplement that is not sold pursuant to the Sale Agreement will be available for sale in other offerings pursuant to the base prospectus, and if no shares of common stock are sold under the Sale Agreement, the full \$200,000,000 of securities may be sold in other offerings pursuant to the base prospectus and a corresponding prospectus supplement.

The information in this prospectus is not complete and may be changed. We may not sell these securities pursuant to this prospectus until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED AUGUST 16, 2022

PROSPECTUS



# CTI BIOPHARMA CORP.

**\$200,000,000**

**Common Stock  
Preferred Stock  
Debt Securities  
Warrants  
Rights  
Units**

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From time to time, we may offer and sell in one or more offerings:

- shares of our common stock;
- shares of our preferred stock;
- debt securities;
- warrants to purchase common stock, preferred stock and/or debt securities;
- rights to purchase common stock, preferred stock and/or debt securities; and
- units consisting of two or more of these classes or series of securities.

We may sell any combination of these securities in one or more offerings, up to an aggregate offering price of \$200,000,000, in amounts, at prices and on terms to be determined at the time of each offering thereof. Each time we offer securities using this prospectus, we will provide specific terms of the securities and the offering in one or more supplements to this prospectus. The prospectus supplements may also add to, update or change the information in this prospectus and will also describe the specific manner in which we will offer the securities. The securities may be offered and sold by us to or through one or more underwriters, broker-dealers or agents, or directly to purchasers on a continuous or delayed basis. See "Plan of Distribution."

This prospectus may not be used by us to sell securities unless accompanied by a prospectus supplement. You should carefully read this prospectus and any accompanying prospectus supplement, including the information incorporated by reference, prior to investing in any of our securities.

Our common stock is quoted on The Nasdaq Capital Market ("Nasdaq") under the symbol "CTIC." On August 12, 2022, the last reported sale price of our common stock on Nasdaq was \$5.79 per share. We do not expect our preferred stock, debt securities, warrants, rights or units to be listed on any securities exchange or over-the-counter market unless otherwise described in the applicable prospectus supplement.

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**Investing in our securities involves a high degree of risk. You should carefully review the risks and uncertainties referenced under the heading "[Risk Factors](#)" beginning on page 6 of this prospectus as well as those contained in the applicable prospectus supplement and any related free writing prospectus, and in the other documents that are incorporated by reference into this prospectus or the applicable prospectus supplement.**

**NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.**

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The date of this prospectus is \_\_\_\_\_, 2022

TABLE OF CONTENTS

	<u>Page</u>
<a href="#">ABOUT THIS PROSPECTUS</a>	1
<a href="#">WHERE YOU CAN FIND MORE INFORMATION</a>	2
<a href="#">SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</a>	3
<a href="#">INFORMATION ABOUT THE COMPANY</a>	5
<a href="#">RISK FACTORS</a>	6
<a href="#">USE OF PROCEEDS</a>	7
<a href="#">PLAN OF DISTRIBUTION</a>	8
<a href="#">GENERAL DESCRIPTION OF CAPITAL STOCK</a>	12
<a href="#">DESCRIPTION OF COMMON STOCK</a>	13
<a href="#">DESCRIPTION OF PREFERRED STOCK</a>	15
<a href="#">DESCRIPTION OF DEBT SECURITIES</a>	17
<a href="#">DESCRIPTION OF WARRANTS</a>	24
<a href="#">DESCRIPTION OF RIGHTS</a>	27
<a href="#">DESCRIPTION OF UNITS</a>	28
<a href="#">LEGAL MATTERS</a>	29
<a href="#">EXPERTS</a>	29
<a href="#">INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE</a>	30

## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the “SEC”), utilizing a “shelf” registration process. Under the shelf registration process, we may, from time to time, sell common stock, preferred stock, debt securities, warrants, rights, units or any combination of these securities in one or more offerings, for a total maximum offering price not to exceed \$200,000,000. This prospectus provides you with a general description of the securities we may offer.

Each time we sell any securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of that offering, including the specific amounts, prices and terms of the securities offered. Any prospectus supplement may include a discussion of risks or other special considerations applicable to us or the offered securities. Any prospectus supplement may also add to, update or change information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any prospectus supplement, on the other hand, you should rely on the information in the prospectus supplement.

You should read this prospectus, any prospectus supplement, any documents that we incorporate by reference in this prospectus and in any prospectus supplement, and the additional information described below under “Where You Can Find More Information” and “Incorporation of Certain Documents by Reference” before making an investment decision.

Neither we nor any dealer or salesperson has authorized anyone to provide you with information in addition to or different from that contained in or incorporated by reference into this prospectus or any accompanying prospectus supplement. We take no responsibility for, and can provide no assurances as to the reliability of, any information not contained in or incorporated by reference into this prospectus or any accompanying prospectus supplement. This prospectus or any accompanying prospectus supplement does not offer to sell or ask for offers to buy any securities other than those to which it relates and it does not constitute an offer to sell or ask for offers to buy any of the securities in any jurisdiction where it is unlawful, where the person making the offer is not qualified to do so, or to any person who cannot legally be offered the securities.

You should not assume that the information in this prospectus, any prospectus supplement, any free writing prospectus or any documents we incorporate by reference herein or therein is accurate as of any date other than the date on the front of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

Market data and industry statistics disclosed in this prospectus, any prospectus supplement, any free writing prospectus or any other document we incorporate by reference herein or therein are based on independent industry publications, reports by market research firms and other published independent sources. Some data and other information is also based on our good faith estimates, which are derived from our review of internal surveys and independent sources. Accordingly, investors should not place undue reliance on this information. By including such market data and information, we do not undertake a duty to update or provide that data in the future.

In this prospectus, the terms “CTI,” “Company,” “registrant,” “we,” “us,” “our” and similar terms refer to CTI BioPharma Corp., a Delaware corporation, and its subsidiaries, unless the context otherwise requires. “CTI” and “VONJO®” are our proprietary marks. All other product names, trademarks and trade names referred to in this prospectus, as supplemented from time to time, are the property of their respective owners.

## WHERE YOU CAN FIND MORE INFORMATION

We are subject to the information requirements of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). In accordance with the Exchange Act, we file reports, proxy statements and other information with the SEC. Such reports, proxy statements and other information filed by us are available to the public free of charge at [www.sec.gov](http://www.sec.gov). Copies of certain information filed by us with the SEC are also available on our website at [www.ctibiopharma.com](http://www.ctibiopharma.com).

This prospectus omits some information contained in the registration statement of which this prospectus forms a part in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and the securities we are offering. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings. You should review the complete document to evaluate these statements.

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and any documents we incorporate by reference herein or therein may contain “forward-looking statements” within the meaning of the U.S. federal securities laws. We have made these statements in reliance on the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical fact are forward-looking statements, including, without limitation:

- our expectations regarding sufficiency of cash resources, cash expenditures, sources of cash flows and other projections, product manufacturing and sales, research and development expenses, selling, general and administrative expenses and additional losses;
- our ability to obtain funding for our operations;
- the commercialization of VONJO as a treatment for adult myelofibrosis patients with severe thrombocytopenia;
- our ability to develop, commercialize and obtain regulatory approval of pacritinib for other development programs we may pursue in the future;
- the design of our clinical trials and their anticipated enrollment;
- the safety, effectiveness and potential benefits and indications of VONJO and any other product candidates we may develop in the future;
- the rate and degree of market acceptance and clinical utility of VONJO or any other product candidates we may develop in the future;
- the timing of and results from clinical trials and pre-clinical development activities, including those related to VONJO and any other product candidates we may develop in the future;
- our ability to advance product candidates, including VONJO and any other product candidates we may develop in the future, into, and the successful completion of, clinical trials;
- our ability to achieve profitability, including our ability to effectively implement cost reduction strategies and realize anticipated cost savings from those efforts;
- our expectations regarding federal, state and foreign regulatory requirements;
- our and our collaborators’ ability to obtain and maintain regulatory approvals, and the timing of such approvals, for VONJO or any other product candidates we may develop in the future;
- our ability to maintain and establish collaborations;
- our expectations regarding market risk, including interest rate changes and foreign currency fluctuations;
- our ability to protect our intellectual property and operate our business without infringing upon the intellectual property rights of others;
- the impact of government laws and regulations;
- our ability to negotiate, integrate, and implement collaborations, acquisitions and other strategic transactions;
- our ability to engage and retain the employees required to advance our development activities and grow our business;
- developments relating to our competitors and our industry, including the success of competing therapies that are or become available;
- our expectations regarding business disruptions and related risks resulting from the ongoing worldwide coronavirus pandemic known as COVID-19; and

## [Table of Contents](#)

- other risks and uncertainties, including those listed under the heading Risk Factors and in other filings we periodically make with the U.S. Securities and Exchange Commission, or the SEC.

In some cases, forward-looking statements can be identified by terms such as “anticipates,” “believes,” “continue,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “projects,” “should” or “will” or the negative thereof, variations thereof and similar expressions. Such statements are based on management’s current expectations and are subject to risks and uncertainties which may cause actual results to differ materially from those set forth in the forward-looking statements. There can be no assurance that such expectations or any of the forward-looking statements will prove to be correct, and actual results could differ materially from those projected or assumed in the forward-looking statements. We urge you to carefully review the disclosures we make concerning risks and other factors that may affect our business and operating results, including those made in “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2021 and in “Part II—Item 1A. Risk Factors” in our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2022 and June 30, 2022, as such risk factors may be updated in subsequent SEC filings, as well as our other reports filed with the SEC and in any prospectus supplement. We caution you not to place undue reliance on forward-looking statements, which speak only as of the date of this prospectus or any prospectus supplement. We do not intend, and we undertake no obligation, to update any forward-looking information to reflect events or circumstances after the date of this prospectus or any prospectus supplement or to reflect the occurrence of unanticipated events, unless required by law to do so.

## INFORMATION ABOUT THE COMPANY

CTI BioPharma Corp., also referred to in this prospectus as “we,” “us,” “our,” the “Company” and “CTI,” is a biopharmaceutical company focused on the acquisition, development and commercialization of novel targeted therapies for blood-related cancers where there is a significant unmet medical need. Our goal is to build a profitable company by generating income from products we develop and commercialize, either alone or with partners. We have one commercially approved product, VONJO® (pacritinib), which received accelerated approval on February 28, 2022 from the U.S. Food and Drug Administration, in the United States, for the treatment of adult patients with intermediate or high-risk primary or secondary (post-polycythemia vera or post-essential thrombocythemia) myelofibrosis with a platelet count below  $50 \times 10^9/L$ . We commercially launched VONJO in March 2022.

We were incorporated in the State of Washington in 1991. In May 2014, we changed our name from “Cell Therapeutics, Inc.” to “CTI BioPharma Corp.” We completed our initial public offering in 1997 and our shares of common stock are listed on Nasdaq under the symbol “CTIC.” On January 24, 2018, we changed our state of incorporation from the State of Washington to the State of Delaware. Our principal executive offices are located at 3101 Western Avenue, Suite 800, Seattle, Washington 98121, and our phone number is (206) 282-7100. Our website is located at [www.ctibiopharma.com](http://www.ctibiopharma.com); however, the information in, or that can be accessed through, our website is not part of this prospectus.

## **RISK FACTORS**

You should carefully consider the risks under the heading “Risk Factors” of our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed with the SEC on March 31, 2022, and our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2022 and June 30, 2022, filed with the SEC on May 12, 2022 and August 8, 2022, respectively, which information is incorporated by reference in this prospectus, and the additional risks and other information in this prospectus, any prospectus supplement and the documents incorporated by reference herein and therein before deciding to invest in our securities. If any of the identified risks actually occur, they could materially adversely affect our business, financial condition, operating results or prospects and the trading price of our securities. Additional risks and uncertainties that we do not presently know or that we currently deem immaterial may also impair our business, financial condition, operating results and prospects and the trading price of our securities.

## USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds to us from the sale of our securities under this prospectus. Unless we indicate otherwise in the applicable prospectus supplement, we anticipate that any net proceeds will be used for continued commercialization of VONJO, general corporate purposes or strategic acquisitions from time to time. General corporate purposes may include:

- increasing our working capital;
- funding research and development (including clinical trials); or
- repaying debt.

We may temporarily invest funds that we do not immediately use in short- and medium-term marketable securities. When we offer particular securities pursuant to this prospectus, we will set forth in the prospectus supplement our intended use for the net proceeds received from the sale of such securities.

## PLAN OF DISTRIBUTION

We may sell the securities offered pursuant to this prospectus and any accompanying prospectus supplements from time to time through underwritten public offerings, negotiated transactions, block trades or a combination of these methods or in one or more transactions:

- to or through one or more underwriters or dealers;
- to investors directly;
- through agents; or
- through any combination of these methods of sale.

Our securities may be offered and sold from time to time in one or more transaction at:

- a fixed price or prices, which may be changed;
- market prices prevailing at the time of sale;
- prices related to the prevailing market prices; or
- negotiated prices.

Any of the prices at which we sell securities may be at a discount to market prices. Broker-dealers may also receive from us, as applicable, or the purchasers of the securities compensation that is not expected to exceed that customary in the types of transactions involved.

Each prospectus supplement, to the extent applicable, will describe the number and terms of the securities to which such prospectus supplement relates, including:

- any over-allotment options under which underwriters, if any, may purchase additional securities;
- the name or names of any underwriters, dealers or agents with whom we have entered into an arrangement with respect to the sale of such securities;
- the public offering or purchase price of such securities;
- any underwriting discounts, commissions or agency fees or other items constituting underwriter or agent compensation;
- any discounts, commissions or concessions allowed or reallocated or paid to dealers;
- any securities exchanges or markets on which the securities may be listed;
- any delayed delivery arrangements; and
- estimated offering expenses and the net proceeds we will receive from such sale.

We may engage in at-the-market offerings into an existing trading market in accordance with Rule 415(a)(4) under the Securities Act. Any at-the-market offering will be through an underwriter or underwriters acting as principal or agent for us.

### **Underwritten Offerings**

If underwriters are used in the sale of any securities, the securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions described above. The applicable prospectus supplement will name any underwriter involved in a sale of securities. Such securities may be either offered to the public through underwriting syndicates represented by managing underwriters, or directly by underwriters. Underwriters may sell the securities to or through dealers, and such dealers may receive

## [Table of Contents](#)

compensation in the form of discounts. Generally, the underwriters' obligations to purchase the securities will be subject to conditions precedent and the underwriters will be obligated to purchase all of the securities if they purchase any of the securities. We may use underwriters with whom we have a material relationship. We will describe any such underwriters in the applicable prospectus supplement, naming the underwriter and the nature of any such relationship.

### **Direct Sales and Sales through Agents**

We may sell securities directly to purchasers. Such purchasers may be institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act, with respect to any sale of those securities. We also may, from time to time, authorize dealers or agents to offer and sell these securities, upon such terms and conditions as may be set forth in the applicable prospectus supplement, if applicable. In order to comply with the securities laws of certain states, if applicable, the securities offered will be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with. This prospectus, one or more prospectus supplements, and the registration statement of which this prospectus forms a part may be used in conjunction with one or more other registration statements to the extent permitted by the Securities Act and the rules and regulations promulgated thereunder.

### **Rights Offerings**

We also may sell directly to investors through subscription rights distributed to our shareholders on a pro rata basis. In connection with any distribution of subscription rights to shareholders, if all of the underlying securities are not subscribed for, we may sell the unsubscribed shares of our securities directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties.

We may also sell securities in one or more of the following transactions:

- block transactions (which may involve crosses) in which a broker-dealer may sell all or a portion of the shares as agent but may position and resell all or a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its own account;
- ordinary brokerage transactions and transactions in which a broker-dealer solicits purchasers;
- sales "at the market" to or through a market maker or into an existing trading market, on an exchange or otherwise, for securities; and
- sales in other ways not involving a market maker or established trading markets, including direct sales to purchasers.

We may also enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. In connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and will be identified in the applicable prospectus supplement or in a post-effective amendment to the registration statement of which this prospectus forms a part.

Any dealers or agents that participate in the distribution of securities may be deemed to be underwriters under the Securities Act, and in such event, any discounts or commissions received by them and any profit realized by

## [Table of Contents](#)

them on the resale of securities they realize may be deemed to be underwriting discounts and commissions under the Securities Act.

### **Indemnification**

Underwriters, dealers, agents and remarketing firms may be entitled, under agreements entered into with us, to indemnification against and contribution toward certain civil liabilities, including liabilities under the Securities Act, or to contribute with respect to payments that the underwriters, dealers, agents or remarketing firms may be required to make.

### **Stabilization**

In connection with any offering of the securities hereby, certain underwriters and selling group members and their respective affiliates may engage in transactions that stabilize, maintain or otherwise affect the market price of the applicable securities. These transactions may include stabilization transactions pursuant to which these persons may bid for or purchase securities for the purpose of stabilizing their market price.

The underwriters in an offering of securities may also create a “short position” for their account by selling more securities in connection with the offering than they are committed to purchase from us. In that case, the underwriters could cover all or a portion of the short position by either purchasing securities in the open market following completion of the offering of these securities or by exercising any over-allotment option granted to them by us. In addition, the managing underwriter may impose “penalty bids” under contractual arrangements with other underwriters, which means that it can reclaim from an underwriter (or any selling group member participating in the offering) for the account of the other underwriters, the selling concession for the securities that are distributed in the offering but subsequently purchased for the account of the underwriters in the open market. Any of the transactions described in this paragraph or comparable transactions that are described in any accompanying prospectus supplement may result in the maintenance of the price of the securities at a level above that which might otherwise prevail in the open market. None of the transactions described in this paragraph or in an accompanying prospectus supplement are required to be taken by an underwriter and, if they are undertaken, may be discontinued at any time.

Under applicable rules and regulations under the Exchange Act, under certain circumstances a person engaged in the distribution of the securities offered under this prospectus and the accompanying prospectus supplement may not simultaneously engage in market making activities with respect to our securities for a specified period prior to the commencement of such distribution.

### **Passive Market-Making on Nasdaq**

Any underwriters who are qualified market makers on Nasdaq may engage in passive market making transactions in our common stock on Nasdaq in accordance with Rule 103 of Regulation M. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market making bid, however, the passive market making bid must then be lowered when certain purchase limits are exceeded.

### **Remarketing Arrangements**

Offered securities may also be offered and sold in connection with a remarketing upon their purchase, in accordance with a redemption or repayment pursuant to their terms, or otherwise, by one or more remarketing firms, acting as principals for their own accounts or as agents for us. We will identify any remarketing firm and describe the terms of its agreements, if any, with us and its compensation in the applicable prospectus supplement.

### **Delayed Delivery Contracts**

If indicated in the applicable prospectus supplement, we will authorize dealers acting as our agents to solicit offers by institutions to purchase securities covered by this prospectus from us at the public offering price set forth in the relevant prospectus supplement under delayed delivery contracts providing for payment and delivery on the date or dates stated in the relevant prospectus supplement. Each delayed delivery contract will be for an amount not less than, and the aggregate principal amount of securities sold pursuant to delayed delivery contracts shall be not less nor more than, the respective amounts stated in the applicable prospectus supplement. Institutions with whom delayed delivery contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions, and other institutions, but will in all cases be subject to our approval. Delayed delivery contracts will not be subject to any conditions except (i) the purchase by an institution of the securities covered by its delayed delivery contracts may not at the time of delivery be prohibited under the laws of any jurisdiction in the United States to which the institution is subject, and (ii) if the securities are being sold to underwriters, we will be required to have sold to such underwriters the total principal amount of the securities less the principal amount thereof covered by delayed delivery contracts. The underwriters and any other agents will not have any responsibility in respect of the validity or performance of delayed delivery contracts.

### **Electronic Auctions**

We may also make sales through the Internet or through other electronic means. Since we may from time to time elect to offer securities directly to the public, with or without the involvement of agents, underwriters or dealers, utilizing the Internet or other forms of electronic bidding or ordering systems for the pricing and allocation of such securities, you will want to pay particular attention to the description of that system we will provide in the applicable prospectus supplement.

Such electronic system may allow bidders to directly participate, through electronic access to an auction site, by submitting conditional offers to buy that are subject to acceptance by us, and which may directly affect the price or other terms and conditions at which such securities are sold. These bidding or ordering systems may present to each bidder, on a so-called “real-time” basis, relevant information to assist in making a bid, such as the clearing spread at which the offering would be sold, based on the bids submitted, and whether a bidder’s individual bids would be accepted, prorated or rejected. For example, in the case of debt security, the clearing spread could be indicated as a number of “basis points” above an index treasury note. Of course, many pricing methods can and may also be used. Upon completion of such an electronic auction process, securities will be allocated based on prices bid, terms of bid or other factors. The final offering price at which securities would be sold and the allocation of securities among bidders would be based in whole or in part on the results of the Internet or other electronic bidding process or auction.

### **Other Relationships**

Underwriters, dealers, agents and remarketing firms may engage in transactions with, or perform services for, us and our affiliates in the ordinary course of business for which they receive customary compensation. Unless we specify otherwise in the related prospectus supplement, each class or series of securities will be a new issue with no established trading market, other than shares of our common stock, which are listed on Nasdaq. It is possible that one or more underwriters may make a market in our securities, but will not be obligated to do so and may discontinue any market making at any time without notice. Therefore, no assurance can be given as to the liquidity of the trading market for our securities.

### **General Information**

The specific terms of any lock-up provisions in respect of any given offering will be described in the applicable prospectus supplement.

## GENERAL DESCRIPTION OF CAPITAL STOCK

The following summaries of common stock and preferred stock do not purport to be complete and are subject to, and qualified in their entirety by, the provisions of our certificate of incorporation, as amended, which we refer to as our certificate of incorporation, our amended and restated bylaws, which we refer to as our bylaws, and all applicable provisions of Delaware law. Our certificate of incorporation and bylaws are incorporated by reference as exhibits to the registration statement of which this prospectus is a part. The particular terms of any offering of our securities will be described in a prospectus supplement relating to such offering.

We are authorized to issue 266,500,000 shares of common stock, par value \$0.001 per share, and 33,333 shares of preferred stock, no par value. As of June 30, 2022 there were 114,130,834 shares of common stock outstanding, 12,575 shares of Series O preferred stock outstanding, 3,383 shares of Series X preferred stock outstanding and 600 shares of Series X<sup>1</sup> shares outstanding. In addition, as of June 30, 2022, 8,382,282 shares of common stock were reserved for issuance under our equity compensation plans and 963,858 shares of common stock were reserved for issuance under our employee stock purchase plan.

## DESCRIPTION OF COMMON STOCK

### **General**

Each holder of common stock is generally entitled to one vote for each share held on all matters to be voted upon by the shareholders and there are no cumulative voting rights. Subject to preferences that may be applicable to any outstanding preferred stock, holders of common stock are entitled to receive ratably the dividends, if any, that are declared from time to time by the board of directors out of funds legally available for that purpose. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share in our assets remaining after the payment of liabilities and the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock. Holders of common stock have no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and non-assessable. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

### **Transfer Agent and Registrar**

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

### **Listing**

Our shares of common stock trade on Nasdaq under the symbol "CTIC."

### **Certain Anti-Takeover Matters**

Our certificate of incorporation and our bylaws include a number of provisions that may have the effect of encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

#### *Board Vacancies*

Our bylaws provide that any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may only be filled by a vote of the board.

#### *Advance Notice Requirements*

Our bylaws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days or more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. The notice must contain certain information specified in the bylaws. These provisions may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed. These provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

#### *Amendment to Certificate of Incorporation and Bylaws*

As required by the Delaware General Corporation Law, any amendment of our certificate of incorporation must first be approved by a majority of our board of directors and, if required by law or our certificate of

## [Table of Contents](#)

incorporation, thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment, and a majority of the outstanding shares of each class entitled to vote thereon as a class. Our bylaws may be amended by the affirmative vote of a majority of the directors then in office, subject to any limitations set forth in the bylaws, and may also be amended by the affirmative vote of the outstanding shares entitled to vote on the amendment.

### ***Blank Check Preferred Stock***

Our certificate of incorporation provides for 33,333 authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise.

For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of us or our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

### ***Section 203 of the Delaware General Corporation Law***

We are subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. A “business combination” includes, among other things, a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. An “interested stockholder” is a person who, together with affiliates and associates, owns, or did own within three years prior to the determination of interested stockholder status, 15% or more of the corporation’s voting stock.

Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, the board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances; or
- at or after the time the stockholder became interested, the business combination was approved by the board of directors of the corporation and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

A Delaware corporation may “opt out” of these provisions with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or bylaws resulting from a stockholders’ amendment approved by at least a majority of the outstanding voting shares. We have not opted out of these provisions. As a result, mergers or other takeover or change in control attempts of us may be discouraged or prevented.

## DESCRIPTION OF PREFERRED STOCK

### General

The rights, preferences, privileges and restrictions of the preferred stock of each series will be fixed by the certificate of amendment to the certificate of incorporation relating to that series and will be described in the applicable prospectus supplement. Our board of directors has the discretion to fix the number of shares of any such series and the designation thereof, and to fix and amend the powers, preferences and rights, and the limitations or restrictions granted to or imposed upon any wholly unissued series of preferred stock, including the voting rights, dividend rights, conversion rights, rights and terms of redemption (including sinking fund provisions), redemption prices and liquidation preferences of any such series. It is not possible to state the actual effects of the issuance of any shares of preferred stock upon the rights of holders of the common stock until our board of directors determines the specific rights of the holders of such preferred stock. However, the effects could include, among other things:

- restricting dividends on the common stock;
- diluting the voting power of the common stock;
- impairing the liquidation rights of the common stock; or
- delaying or preventing a change in control of the Company without further action by the shareholders.

As stated above, the applicable prospectus supplement will specify the terms of the series of preferred stock being offered, including the following:

- the number of shares of preferred stock being offered;
- the designation of the series of preferred stock;
- the per share purchase price of the preferred stock;
- the dividend rate or method of determining the dividend rate, if any, including whether the dividend rate is fixed or variable;
- the date or dates on which dividends will accrue and the dividend payment dates;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the dates from which dividends will accrue;
- the price and the terms and conditions for redemption, if any, including redemption at our option or at the option of the holders, the time period for redemption, and any accumulated dividends or premiums;
- the liquidation preference, if any, and any accumulated dividends upon the liquidation, dissolution or winding up of our affairs;
- any sinking fund or similar provision, and, if so, the terms and provisions relating to the purpose and operation of the fund;
- the terms and conditions, if any, for conversion or exchange of preferred stock for any other class or classes of our securities, including the price or the rate of conversion or exchange and the method, if any, of adjustment;
- the voting rights of the preferred stock;
- any exchange on which the preferred stock will be listed;
- the transfer agent for the preferred stock; and
- any or all other preferences and relative, participating, optional or other special rights, privileges or qualifications, limitations or restrictions.

## **Rank**

Unless otherwise specified in the applicable prospectus supplement, the preferred stock will, with respect to distribution rights and rights upon liquidation, dissolution or winding up of the company, rank (i) senior to our common stock and to any series of preferred stock which specifically provides that it will rank junior to the preferred stock being offered, (ii) junior to any series of preferred stock which specifically provides that it will rank senior to the preferred stock being offered and (iii) on parity with any other series of preferred stock.

The issuance of preferred stock will affect, and may adversely affect, the rights of holders of common stock. It is not possible to state the actual effect of the issuance of any shares of preferred stock on the rights of holders of common stock until our board of directors determines the specific rights attached to that preferred stock. The effects of issuing preferred stock could include one or more of the following:

- restricting dividends on the common stock;
- diluting the voting power of the common stock;
- impairing the liquidation rights of the common stock; or
- delaying or preventing changes in control or management of our company.

## **Dividend Rights**

Holders of preferred stock will have the dividend rights set forth in the applicable prospectus supplement. Dividends on any series of preferred stock, if cumulative, will be cumulative from and after the date set forth in the applicable prospectus supplement. Any restriction on the repurchase or redemption of shares of preferred stock while dividends on such shares are in arrears shall be set forth in the applicable prospectus supplement.

## **Certain Anti-Takeover Matters**

Refer to “Description of Common Stock—Certain Anti-Takeover Matters” for a discussion of provisions under Delaware law, our certificate of incorporation and our bylaws that may have the effect of delaying, deferring or preventing a change in control.

## DESCRIPTION OF DEBT SECURITIES

This summary, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the debt securities that we may offer under this prospectus. While the terms we have summarized below will generally apply to any future debt securities we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities we offer under a prospectus supplement may differ from the terms we describe below.

The debt securities may be either secured or unsecured and will either be senior debt securities or subordinated debt securities. We will issue the senior notes under the senior indenture which we will enter into with one or more trustees. We will issue the subordinated notes under the subordinated indenture which we will enter into with one or more trustees. We have filed forms of these documents as exhibits to the registration statement of which this prospectus forms a part. We use the term “indentures” to refer to both the senior indenture and the subordinated indenture.

The indentures will be qualified under the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act. We use the term “debenture trustee” to refer to either the senior trustee or the subordinated trustee, as applicable.

The following summaries of the material provisions of the senior notes, the subordinated notes and the indentures are subject to, and qualified in their entirety by reference to, all of the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplements related to the debt securities that we sell under this prospectus, as well as the complete indentures that contain the terms of the debt securities. Except as we may otherwise indicate, the terms of the senior indenture and the subordinated indenture are identical.

### General

We will describe in the applicable prospectus supplement the terms relating to a series of debt securities, including, to the extent applicable:

- the title;
- the principal amount being offered and, if a series, the total amount authorized and the total amount outstanding;
- any limit on the amount that may be issued;
- whether or not we will issue the series of debt securities in global form and, if so, the terms and who the depository will be;
- the maturity date;
- the principal amount due at maturity and whether the debt securities will be issued with any original issue discount;
- whether and under what circumstances, if any, we will pay additional amounts on any debt securities held by a person who is not a U.S. person for U.S. federal income tax purposes, and whether we can redeem the debt securities if we have to pay such additional amounts;
- the interest rate, which may be fixed or variable, or the method for determining the rate, the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;
- the rate or rates of amortization of the debt securities;
- whether or not the debt securities will be secured or unsecured, the terms of any secured debt and the properties secured by any such debt;

## Table of Contents

- whether or not the debt securities will be senior or subordinated, and the terms of the subordination of any series of subordinated debt;
- the place where payments will be payable;
- restrictions on transfer, sale or other assignment, if any;
- our right, if any, to defer payment of interest and the maximum length of any such deferral period;
- the date, if any, after which, the conditions upon which, and the price at which we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions, and any other applicable terms of those redemption provisions;
- provisions for a sinking fund, purchase or other analogous fund, if any;
- the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to retire, redeem, or at the holder's option to purchase, the series of debt securities;
- whether the indenture will restrict our ability and/or the ability of our subsidiaries to:
  - incur additional indebtedness;
  - issue additional securities;
  - create liens;
  - pay dividends and make distributions in respect of our capital stock and the capital stock of our subsidiaries;
  - redeem capital stock;
  - place restrictions on our subsidiaries' ability to pay dividends, make distributions or transfer assets;
  - make investments or other restricted payments;
  - sell or otherwise dispose of assets;
  - enter into sale-leaseback transactions;
  - engage in transactions with shareholders and affiliates;
  - issue or sell stock of our subsidiaries; or
  - effect a consolidation or merger;
- whether the indenture will require us to maintain any interest coverage or other financial reserve, fixed charge, cash flow-based, asset-based or other financial ratios;
- a discussion of any material or special U.S. federal income tax considerations applicable to the debt securities;
- information describing any book-entry features;
- the procedures for any auction and remarketing, if any;
- the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof;
- if other than U.S. dollars, the currency in which the series of debt securities will be denominated; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, including any events of default that are in addition to those described in this prospectus or any covenants provided with respect to the debt securities that are in addition to those described above, and any terms which may be required by us or advisable under applicable laws or regulations or advisable in connection with the marketing of the debt securities.

### **Conversion or Exchange Rights**

We will set forth in the applicable prospectus supplements the terms on which a series of debt securities may be convertible into or exchangeable for common stock or other securities of ours or a third party, including the conversion or exchange rate, as applicable, or how it will be calculated, and the applicable conversion or exchange period. We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of our securities or the securities of a third party that the holders of the series of debt securities receive upon conversion or exchange would, under the circumstances described in those provisions, be subject to adjustment, or pursuant to which those holders would, under those circumstances, receive other property upon conversion or exchange, for example in the event of our merger or consolidation with another entity.

### **Consolidation, Merger or Sale**

The indentures in the form initially filed as exhibits to the registration statement of which this prospectus forms a part do not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of all or substantially all of our assets. However, any successor of ours or acquirer of such assets must assume all of our obligations under the indentures and the debt securities.

If the debt securities are convertible into our other securities, the person with whom we consolidate or merge or to whom we sell all of our property must make provisions for the conversion of the debt securities into securities which the holders of the debt securities would have received if they had converted the debt securities before the consolidation, merger or sale.

### **Events of Default Under the Indentures**

Unless otherwise specified in the applicable prospectus supplement, the following are events of default under the indentures with respect to any series of debt securities that we may issue:

- if we fail to pay interest when due and payable and our failure continues for 90 days and the time for payment has not been validly extended;
- if we fail to pay the principal, or premium, if any, or to make payment required by any sinking fund or analogous fund when due and payable and the time for payment has not been validly extended;
- if we fail to observe or perform any other covenant contained in the debt securities or the indentures, other than a covenant specifically relating to another series of debt securities, and our failure continues for 90 days after we receive notice from the debenture trustee or holders of at least 25% in aggregate principal amount of the outstanding debt securities of the applicable series; and
- if specified events of bankruptcy, insolvency or reorganization occur.

If an event of default with respect to debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the debenture trustee or the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series may, by notice to us in writing (and to the debenture trustee if notice is given by such holders), declare the unpaid principal, premium, if any, and accrued interest, if any, due and payable immediately. If an event of default specified in the last bullet point above occurs with respect to us, the principal amount of and accrued interest, if any, of each series of debt securities then outstanding shall be due and payable without any notice or other action on the part of the debenture trustee or any holder.

The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture.

## Table of Contents

Subject to the terms of the indentures, if an event of default under an indenture shall occur and be continuing, the debenture trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the debenture trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the debenture trustee, or exercising any trust or power conferred on the debenture trustee, with respect to the debt securities of that series, provided that:

- the direction so given by the holder is not in conflict with any law or the applicable indenture; and
- subject to its duties under the Trust Indenture Act, the debenture trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will only have the right to institute a proceeding under the indentures or to appoint a receiver or trustee, or to seek other remedies, if:

- the holder has given written notice to the debenture trustee of a continuing event of default with respect to that series;
- the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made written request, and such holders have offered reasonable indemnity to the debenture trustee, to institute the proceeding as trustee; and
- the debenture trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series other conflicting directions, within 90 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on the debt securities.

We will be required to deliver to the debenture trustee, within 120 days after the end of each fiscal year during which any debt securities were outstanding, a certificate stating whether the signors know that any default or event of default occurred during such fiscal year, as well as certain other reports.

### **Modification of Indenture; Waiver**

We and the debenture trustee may modify an indenture without the consent of any holders with respect to specific matters, including, without limitation:

- to fix any ambiguity, defect or inconsistency in the indenture or in the debt securities of any series;
- to comply with the provisions described above under “Consolidation, Merger or Sale”;
- to comply with any requirements of the SEC in connection with the qualification of any indenture under the Trust Indenture Act;
- to evidence and provide for the acceptance of appointment under the indenture by a successor trustee;
- to provide for uncertificated debt securities in addition to or in place of certificated securities and to make all appropriate changes for such purpose;
- to add to, delete from, or revise the conditions, limitations and restrictions on the authorized amount, terms or purposes of issuance, authentication and delivery of debt securities of any series;
- to provide for the issuance of and establish the form and terms and conditions of the debt securities of any series authorized pursuant to the indentures, to establish the form of any certifications required to be furnished pursuant to the indentures or any series or to add to the rights of the holders of any series of debt securities;

## Table of Contents

- to add to our covenants such new covenants, restrictions, conditions or provisions for the protection of the holders, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default, or to surrender any of our rights or powers under the indenture; or
- to change anything that does not adversely affect the rights of any holder of debt securities of any series in any material respect.

In addition, under the indentures, the rights of holders of debt securities of any series may be changed by us and the debenture trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, we and the debenture trustee may only make the following changes with the consent of each holder of any outstanding debt securities affected:

- extending the fixed maturity of the debt securities of any series;
- reducing the principal amount, reducing the rate of or extending the time of payment of interest or reducing any premium payable upon the redemption of any debt securities; or
- reducing the percentage of debt securities the holders of which are required to consent to any supplemental indenture.

### **Discharge**

The indentures provide that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for certain obligations, including obligations to:

- register the transfer or exchange of debt securities of the series;
- replace mutilated, destroyed, lost or stolen debt securities of the series;
- maintain paying agencies;
- compensate and indemnify the debenture trustee; and
- appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the debenture trustee money or government obligations, or a combination of both, sufficient to pay all of the principal, premium, if any, and interest on the debt securities of the series on the dates payments are due.

### **Form, Exchange and Transfer**

We will issue the debt securities of each series only in fully registered form without coupons and, unless we otherwise specify in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indentures provide that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, known as DTC, or another depository named by us and identified in a prospectus supplement with respect to that series.

At the option of the holder, subject to the terms of the indentures and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indentures and the limitations applicable to global securities set forth in the applicable prospectus supplements, holders of the debt securities may present the debt securities for exchange or for

## Table of Contents

registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will not impose a service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges applicable to or associated with such registration of transfer or exchange.

We will name in the applicable prospectus supplements the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

- issue, register the transfer of, or exchange any debt securities of any series being redeemed in part during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or
- register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

### **Information Concerning the Debenture Trustee**

The debenture trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the debenture trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the debenture trustee is under no obligation to exercise any of the powers given it by the indentures at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

### **Payment and Paying Agents**

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of, and any premium and interest on, the debt securities of a particular series at the office of the paying agents designated by us, except that, unless we otherwise indicate in the applicable prospectus supplement, we may make certain payments by check which we will mail to the holder or by wire transfer to certain holders. Unless we otherwise indicate in a prospectus supplement, we will designate an office or agency of the debenture trustee in the city of New York as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the debenture trustee for the payment of the principal of or any premium or interest on any debt securities which remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

**No Protection in the Event of a Change in Control**

Unless otherwise indicated in a prospectus supplement with respect to a particular series of debt securities, the debt securities will not contain any provisions that may afford holders of the debt securities protection in the event we have a change in control or in the event of a highly leveraged transaction, whether or not such transaction results in a change in control.

**No Personal Liability of Directors, Officers, Employees and Shareholders**

No incorporator, shareholder, employee, agent, officer, director or subsidiary of ours will have any liability for any obligations of ours, or because of the creation of any indebtedness under the debt securities, the indentures or supplemental indentures. The indentures provide that all such liability is expressly waived and released as a condition of, and as a consideration for, the execution of such indentures and the issuance of the debt securities.

**Governing Law**

The indentures and the debt securities will be governed by and construed in accordance with the laws of the state of New York, except to the extent that the Trust Indenture Act is applicable.

**Subordination of Subordinated Debt Securities**

The subordinated debt securities will be subordinate and junior in priority of payment to certain of our other indebtedness to the extent described in a prospectus supplement. The indentures in the form initially filed as exhibits to the registration statement of which this prospectus forms a part do not limit the amount of indebtedness which we may incur, including senior indebtedness or subordinated indebtedness, and do not limit us from issuing any other debt, including secured debt or unsecured debt. Additional or different subordination provisions may be described in a prospectus supplement relating to a particular series of debt securities.

## DESCRIPTION OF WARRANTS

This summary, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus, which consist of warrants to purchase our common stock, preferred stock and/or debt securities in one or more series. Warrants may be offered independently or together with our common stock, preferred stock, debt securities and/or rights offered by any prospectus supplement, and may be attached to or separate from those securities. While the terms we have summarized below will generally apply to any future warrants we may offer under this prospectus, we will describe the particular terms of any warrants that we may offer in more detail in the applicable prospectus supplement. The terms of any warrants we offer under a prospectus supplement may differ from the terms we describe below.

We will issue the warrants directly or under a warrant agreement which we will enter into with a warrant agent to be selected by us. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent, all as set forth in the prospectus supplement relating to the particular issue of offered warrants. We use the term “warrant agreement” to refer to any of these warrant agreements. We use the term “warrant agent” to refer to the warrant agent under any of these warrant agreements. The warrant agent will act solely as an agent of ours in connection with the warrants and will not act as an agent for the holders or beneficial owners of the warrants.

The following summary of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all of the provisions of the warrant agreement applicable to a particular series of warrants. We urge you to read the applicable prospectus supplements related to the warrants that we sell pursuant to this prospectus, as well as the complete warrant agreements that contain the terms of the warrants.

### General

We will describe in the applicable prospectus supplements the terms relating to a series of warrants.

If warrants for the purchase of securities are offered, the prospectus supplement will describe the following terms, to the extent applicable:

- the number of shares of common stock or preferred stock purchasable upon the exercise of warrants to purchase such shares and the price at which such number of shares may be purchased upon such exercise (as well as provision for changes to or adjustments in such exercise price);
- the currencies in which the warrants are being offered;
- the designation, stated value and terms (including, without limitation, liquidation, dividend, conversion and voting rights) of the series of preferred stock purchasable upon exercise of warrants to purchase preferred stock;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property, together with the designation, denominations, currencies and other terms of the debt securities purchasable upon exercise of debt warrants;
- the date on and after which the holder of the warrants can transfer them separately from the related security;
- the principal amount of the series of debt securities that can be purchased if a holder exercises a warrant and the price at which and currencies in which such principal amount may be purchased upon exercise;
- the terms of any anti-dilution or other adjustment provisions;

## Table of Contents

- the terms of any mandatory or optional call or redemption of the warrants;
- the date on which the right to exercise the warrants begins and the date on which such right expires, and any expiration acceleration provisions;
- the number of warrants outstanding, if any;
- a discussion of any material U.S. federal income tax considerations applicable to the warrants;
- whether the warrants are issued pursuant to a warrant agreement with a warrant agent or issued directly by us;
- the number of warrants then-outstanding, if any; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the warrants.

A holder of warrant certificates may exchange them for new certificates of different denominations, present them for registration of transfer and exercise them at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement. Until any warrants to purchase debt securities are exercised, the holder of the warrants will not have any of the rights of holders of the related security that can be purchased upon exercise, including any rights to:

- receive notice as shareholders with respect to any meeting of shareholders for the election of our directors or any other matter;
- exercise any rights as shareholders; or
- receive payments of principal, premium or interest on any underlying debt securities or to enforce covenants in the applicable indenture.

### **Exercise of Warrants**

Warrants may be exercised at the applicable price at any time up to the close of business on the expiration date set forth in the applicable prospectus supplement or other offering material. After the close of business on the expiration date, unexercised warrants will become void.

Warrants may be exercised in the method(s) as set forth in the applicable prospectus supplement or other offering material. Upon receipt of payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the prospectus supplement or other offering material, we will forward, as soon as practicable, the securities purchasable upon such exercise.

### **Amendments and Supplements to the Warrant Agreements**

We may amend or supplement a warrant agreement without the consent of the holders of the applicable warrants to cure ambiguities in the warrant agreement, to cure, correct or supplement a defective provision in the warrant agreement, or to provide for other matters under the warrant agreement that we and the warrant agent deem necessary or desirable, so long as, in each case, such amendments or supplements do not materially adversely affect the interests of the holders of the warrants.

### **Warrant Adjustments**

Unless the applicable prospectus supplements state otherwise, the exercise price of, and the number of securities covered by, a common stock warrant or preferred stock warrant will be adjusted proportionately if we subdivide or combine our common stock or preferred stock, as applicable.

## [Table of Contents](#)

In addition, unless the prospectus supplements state otherwise, if we, without payment therefor:

- issue capital stock or other securities convertible into or exchangeable for common stock or preferred stock, or any rights to subscribe for, purchase or otherwise acquire any of the foregoing, as a dividend or distribution to holders of our common stock or preferred stock;
- pay any cash to holders of our common stock or preferred stock other than a cash dividend paid out of our current or retained earnings or other than in accordance with the terms of the preferred stock;
- issue any evidence of our indebtedness or rights to subscribe for or purchase our indebtedness to holders of our common stock or preferred stock; or
- issue common stock or preferred stock or additional stock or other securities or property to holders of our common stock or preferred stock by way of spinoff, split-up, reclassification, combination of shares or similar corporate rearrangement;

then the holders of common stock warrants and preferred stock warrants, as applicable, will be entitled to receive upon exercise of the warrants, in addition to the securities otherwise receivable upon exercise of the warrants and without paying any additional consideration, the amount of stock and other securities and property such holders would have been entitled to receive had they held the common stock or preferred stock, as applicable, issuable under the warrants on the dates on which holders of those securities received or became entitled to receive such additional stock and other securities and property.

Except as stated above, the exercise price and number of securities covered by a common stock warrant or preferred stock warrant, and the amounts of other securities or property to be received, if any, upon exercise of those warrants, will not be adjusted or provided for if we issue those securities or any securities convertible into or exchangeable for those securities, or securities carrying the right to purchase those securities or securities convertible into or exchangeable for those securities.

Holders of common stock warrants and preferred stock warrants may have additional rights under the following circumstances:

- certain reclassifications, capital reorganizations or changes of the common stock or preferred stock, as applicable;
- certain share exchanges, mergers, or similar transactions involving us and which result in changes of the common stock or preferred stock, as applicable; or
- certain sales or dispositions to another entity of all or substantially all of our property and assets.

If one of the above transactions occurs and holders of our common stock or preferred stock are entitled to receive stock, securities or other property with respect to or in exchange for their securities, the holders of the common stock warrants and preferred stock warrants then outstanding, as applicable, will be entitled to receive upon exercise of their warrants the kind and amount of shares of stock and other securities or property that they would have received upon the applicable transaction if they had exercised their warrants immediately before the transaction.

## DESCRIPTION OF RIGHTS

This summary, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the rights that we may offer under this prospectus, which consist of rights to purchase our common stock, preferred stock and/or debt securities in one or more series. Rights may be offered independently or together with our common stock, preferred stock, debt securities and/or warrants offered by any prospectus supplement, and may be attached to or separate from those securities. While the terms we have summarized below will generally apply to any future rights we may offer pursuant to this prospectus, we will describe the particular terms of any rights that we may offer in more detail in the applicable prospectus supplements. The terms of any rights we offer under a prospectus supplement may differ from the terms we describe below.

The applicable prospectus supplements relating to any rights that we offer will include specific terms of any offering of rights for which this prospectus is being delivered, including the following, to the extent applicable:

- the date for determining the persons entitled to participate in the rights distribution;
- the price, if any, per right;
- the exercise price payable for each share of common stock, share of preferred stock or debt security upon the exercise of the rights;
- the number of rights issued or to be issued to each holder;
- the number and terms of the shares of common stock, shares of preferred stock or debt securities that may be purchased per each right;
- the extent to which the rights are transferable;
- any other terms of the rights, including the terms, procedures and limitations relating to the exchange and exercise of the rights;
- the respective dates on which the holder's ability to exercise the rights will commence and will expire;
- the number of rights outstanding, if any;
- a discussion of any material U.S. federal income tax considerations applicable to the rights;
- the extent to which the rights may include an over-subscription privilege with respect to unsubscribed securities or an over-allotment privilege to the extent the securities are fully subscribed; and
- if applicable, the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of such rights.

The description in the applicable prospectus supplements of any rights that we may offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable rights agreement and/or rights certificate, which will be filed with the SEC in connection therewith. Therefore, you should carefully consider the actual provisions of the rights, the rights agreement and the applicable securities.

## DESCRIPTION OF UNITS

This summary, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the units that we may offer under this prospectus, which may consist of one or more shares of common stock, shares of preferred stock, debt securities, warrants, rights or any combination of such securities. While the terms we have summarized below will generally apply to any future units we may offer pursuant to this prospectus, we will describe the particular terms of any units that we may offer in more detail in the applicable prospectus supplements. The terms of any units we offer under a prospectus supplement may differ from the terms we describe below.

The applicable prospectus supplements relating to any units that we offer will include specific terms of any offering of units for which this prospectus is being delivered, including the following, to the extent applicable:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- whether we will apply to have the units traded on a securities exchange or securities quotation system;
- a discussion of any material U.S. federal income tax considerations applicable to the units; and
- how, for U.S. federal income tax purposes, the purchase price paid for the units is to be allocated among the component securities.

The description in the applicable prospectus supplements of any units that we may offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable unit agreement, which will be filed with the SEC in connection therewith. Therefore, you should carefully consider the actual provisions of the units, the units agreement and the applicable securities.

## **LEGAL MATTERS**

Certain legal matters in connection with the securities offered hereby will be passed upon for us by Gibson, Dunn & Crutcher LLP, San Francisco, California. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

## **EXPERTS**

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2021 (which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern as described in Note 1 to the consolidated financial statements), as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

## INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

SEC rules allow us to “incorporate by reference” into this prospectus much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference into this prospectus is considered to be part of this prospectus. This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents deemed to be furnished and not filed in accordance with SEC rules) until the offering of the securities under the registration statement of which this prospectus forms a part is terminated or completed:

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2021, filed with the SEC on March 31, 2022;
- portions of the [proxy statement](#) for our 2022 annual meeting of shareholders, filed with the SEC on April 19, 2022, to the extent specifically incorporated by reference to our Annual Report on [Form 10-K](#) for the year ended December 31, 2021;
- our Quarterly Reports on Form 10-Q for the fiscal quarters ended [March 31, 2022](#) and [June 30, 2022](#), filed with the SEC on May 12, 2022 and August 8, 2022, respectively;
- our Current Reports on Form 8-K filed with the SEC on [March 2, 2022](#), [March 4, 2022](#), [June 3, 2022](#) and [August 15, 2022](#); and
- the description of our capital stock contained in our Registration Statement on [Form 10](#) filed with the SEC on June 27, 1996, as amended.

Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and later information filed with the SEC may update and supersede some of the information included or incorporated by reference in this prospectus. This means that you must look at all of our SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded.

We will provide without charge to each person, including any beneficial owners, to whom this prospectus is delivered, upon his or her written or oral request, a copy of any or all documents referred to above which have been or may be incorporated by reference into this prospectus but not delivered with this prospectus, excluding exhibits to those documents unless they are specifically incorporated by reference into those documents. You may request a copy of these documents by writing or telephoning us at the following address:

CTI BioPharma Corp.  
3101 Western Avenue, Suite 800  
Seattle, Washington 98121  
(206) 282-7100  
Attention: Investor Relations

**The information in this prospectus supplement is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus supplement is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.**

**SUBJECT TO COMPLETION, DATED AUGUST 16, 2022**

**PROSPECTUS SUPPLEMENT (To prospectus dated \_\_\_\_\_, 2022)**



**Up to \$100,000,000  
Common Stock**

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We have entered into an Open Market Sale Agreement<sup>SM</sup> (the "Sale Agreement") with Jefferies LLC ("Jefferies") relating to shares of our common stock, par value \$0.001 per share, offered by this prospectus supplement and the accompanying prospectus. In accordance with the terms of the Sale Agreement, pursuant to this prospectus supplement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$100.0 million from time to time through Jefferies acting as our sales agent.

Our common stock is listed on the Nasdaq Capital Market ("Nasdaq") under the symbol "CTIC." On August 12, 2022, the last reported sale price of our common stock was \$5.79 per share.

Sales of our common stock, if any, under this prospectus supplement and the accompanying prospectus will be made by any method that is deemed to be an "at the market offering" as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended (the "Securities Act"), including sales made directly on or through Nasdaq or any other existing trading market of our common stock. Jefferies is not required to sell any specific amount of securities, but will act as our sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between Jefferies and us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

Jefferies will be entitled to compensation at a commission rate equal to 3.0% of the gross proceeds of any shares of common stock sold on our behalf. In connection with the sale of the common stock on our behalf, Jefferies will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of Jefferies will be deemed to be underwriting commissions or discounts. We have also agreed to indemnify Jefferies against certain civil liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended (the "Exchange Act"). See "Plan of Distribution" beginning on page S-10 for additional information regarding compensation to be paid to Jefferies.

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**Our business and an investment in our common stock involve significant risks. These risks are described under the caption "[Risk Factors](#)" beginning on page S-4 of this prospectus supplement and in the documents incorporated by reference into this prospectus supplement.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus supplement. Any representation to the contrary is a criminal offense.**

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**Jefferies**

**The date of this prospectus supplement is \_\_\_\_\_, 2022.**

TABLE OF CONTENTS

	<u>Page</u>
<b>Prospectus Supplement</b>	
<a href="#">ABOUT THIS PROSPECTUS SUPPLEMENT</a>	S-1
<a href="#">PROSPECTUS SUPPLEMENT SUMMARY</a>	S-2
<a href="#">THE OFFERING</a>	S-3
<a href="#">RISK FACTORS</a>	S-4
<a href="#">FORWARD-LOOKING STATEMENTS</a>	S-6
<a href="#">USE OF PROCEEDS</a>	S-8
<a href="#">DILUTION</a>	S-9
<a href="#">PLAN OF DISTRIBUTION</a>	S-10
<a href="#">LEGAL MATTERS</a>	S-12
<a href="#">EXPERTS</a>	S-12
<a href="#">WHERE YOU CAN FIND ADDITIONAL INFORMATION</a>	S-13
<a href="#">INCORPORATION OF CERTAIN INFORMATION BY REFERENCE</a>	S-14

## ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, including the documents incorporated by reference, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference therein, provides more general information. Generally, when we refer to this prospectus supplement, we are referring to both parts of this document combined. Before you invest, you should carefully read this prospectus supplement, the accompanying prospectus, all information incorporated by reference herein and therein, as well as the additional information described under “Where You Can Find Additional Information” on page S-13 of this prospectus supplement. These documents contain information that you should consider when making your investment decision. This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent that any statement that we make in this prospectus supplement is inconsistent with statements made in the accompanying prospectus or any documents incorporated by reference therein, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying prospectus and such documents incorporated by reference therein.

Neither we nor Jefferies has authorized anyone to provide you with information that is different from that contained in this prospectus or in any free writing prospectus we may authorize to be delivered or made available to you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

In this prospectus supplement, the terms “CTI,” “Company,” “we,” “us,” “our” and similar terms refer to CTI BioPharma Corp., a Delaware corporation, and its subsidiaries, unless the context otherwise requires. We use “CTI” and “VONJO®” and other marks as trademarks within the United States and other countries. This prospectus supplement, the accompanying prospectus and the documents incorporated by reference contain references to our trademarks as well as third-party trademarks. Solely for convenience, trademarks and trade names, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate in any way that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use of third-party trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other entity.

## PROSPECTUS SUPPLEMENT SUMMARY

*This summary highlights selected information about us, this offering and information appearing elsewhere in this prospectus supplement, in the accompanying prospectus and in the documents we incorporated by reference. This summary is not complete and does not contain all the information that you should consider before investing in our common stock pursuant to this prospectus supplement and the accompanying prospectus. Before making an investment decision, to fully understand this offering and its consequences to you, you should carefully read this entire prospectus supplement and the accompanying prospectus, including "Risk Factors" beginning on page S-4 of this prospectus supplement, the financial statements and related notes and the other information that we incorporated by reference herein, including our most recent Annual Report on Form 10-K and each subsequent Quarterly Report on Form 10-Q.*

### **CTI BioPharma Corp.**

#### **Overview**

We are a commercial biopharmaceutical company focused on the acquisition, development and commercialization of novel targeted therapies for blood-related cancers where there is a significant unmet medical need. Our goal is to build a profitable company by generating income from products we develop and commercialize, either alone or with partners. We have one commercially approved product, VONJO® (pacritinib), which received accelerated approval on February 28, 2022 from the U.S. Food and Drug Administration, in the United States, for the treatment of adult patients with intermediate or high-risk primary or secondary (post-polycythemia vera or post-essential thrombocythemia) myelofibrosis with a platelet count below  $50 \times 10^9/L$ . We commercially launched VONJO® in March 2022.

#### **Corporate Information and History**

We were incorporated in the State of Washington in 1991. On January 24, 2018, we changed our state of incorporation from the State of Washington to the State of Delaware. Shares of our common stock trade on Nasdaq under the symbol "CTIC." Our principal executive offices are located at 3101 Western Avenue, Suite 800, Seattle, Washington 98121, and our phone number is (206) 282-7100. Our website is located at [www.ctibiopharma.com](http://www.ctibiopharma.com); however, the information in, or that can be accessed through, our website is not part of or incorporated by reference into this prospectus supplement, the accompanying prospectus or any other filings we make with the United States Securities and Exchange Commission (the "SEC").

## THE OFFERING

<b>Common stock offered by us</b>	Shares of common stock having an aggregate offering price of up to \$100.0 million.
<b>Common stock to be outstanding after this offering</b>	Up to 131,401,991 shares of common stock, assuming sales of 17,271,157 shares in this offering at a public offering price of \$5.79 per share, which was the closing price of our common stock on Nasdaq on August 12, 2022. The actual number of shares issued will vary depending on the sales price under this offering and, in any event, may not exceed the number of authorized and available shares under our certificate of incorporation.
<b>Plan of Distribution</b>	“At-the-market” offering that may be made from time to time on Nasdaq or other market for our common stock through our sales agent, Jefferies. See “Plan of Distribution” on page S-10.
<b>Use of Proceeds</b>	We currently plan to use the net proceeds from this offering for the continued commercialization of VONJO®, as well as for general corporate purposes and working capital. Please see “Use of Proceeds” on page S-8.
<b>Risk Factors</b>	See “Risk Factors” beginning on page S-4 of this prospectus supplement for a discussion of factors that you should read and consider before investing in our securities.
<b>Nasdaq symbol</b>	CTIC

The number of shares of our common stock to be outstanding after this offering is based on 114,130,834 shares of our common stock outstanding as of June 30, 2022 and excludes as of that date:

- 24,631,132 shares of common stock issuable upon exercise of options outstanding as of June 30, 2022, at a weighted-average exercise price of \$2.74 per share;
- 169,014 shares of common stock issuable upon the exercise of warrants outstanding as of June 30, 2022, at a weighted-average exercise price of \$2.84 per share;
- 6,000,000 shares of common stock issuable upon the conversion of 600 shares of Series X<sup>1</sup> Preferred Stock at a conversion price of \$2.50 per share;
- 33,830,000 shares of common stock issuable upon the conversion of 3,383 shares of Series X Preferred Stock at a conversion price of \$1.00 per share;
- 8,383,333 shares of common stock issuable upon the conversion of 12,575 shares of Series O Preferred Stock at a conversion price of \$3.00 per share;
- 963,858 shares of common stock reserved for issuance under our employee stock purchase plan; and
- 8,382,282 shares of common stock reserved for future issuance under our equity compensation plans.

## RISK FACTORS

*Investors should carefully consider the risks described below and those included in the filings incorporated by reference, including our Annual Report on Form 10-K for the fiscal year ended December 31, 2021 and our Quarterly Reports on Form 10-Q before deciding whether to invest in our securities. The risks described below and those described in the filings incorporated by reference are not the only ones we face. If any of the following risks actually occurs, our business, financial condition, results of operations or prospects could be adversely affected. In such case, the trading price of our common stock could decline and you could lose all or part of your investment. Our actual results could differ materially from those anticipated in the forward-looking statements made throughout this prospectus supplement and in the documents incorporated by reference as a result of different factors, including the risks we face described below and those described in the filings incorporated by reference.*

### **Risks Related to this Offering**

***If you purchase shares of our common stock sold in this offering, you may experience immediate and substantial dilution in the net tangible book value of your shares. In addition, we may issue additional equity or convertible debt securities in the future, which may result in additional dilution to investors.***

The price per share of our common stock being offered may be higher than the net tangible book value per share of our outstanding common stock prior to this offering. Assuming that an aggregate of 17,271,157 shares of our common stock are sold at a price of \$5.79 per share, the last reported sale price of our common stock on Nasdaq on August 12, 2022, for aggregate gross proceeds of approximately \$100.0 million and after deducting commissions and estimated offering expenses payable by us, new investors in this offering would incur immediate dilution of \$5.28 per share. For a more detailed discussion of the foregoing, see the section entitled “Dilution” below. To the extent outstanding stock options are exercised, there will be further dilution to new investors. In addition, to the extent we need to raise additional capital in the future and we issue additional shares of common stock or securities convertible or exchangeable for our common stock, our then existing stockholders may experience dilution and the new securities may have rights senior to those of our common stock offered in this offering.

***We will have broad discretion over the use of the net proceeds from this offering and may apply it to uses that do not improve our operating results or the value of your securities.***

We will have broad discretion to use the net proceeds to us from this offering, and investors will be relying solely on the judgment of our board of directors and management regarding the application of these proceeds. Although we expect to use the net proceeds from this offering to further commercialize VONJO®, as well as for general corporate purposes and working capital, we have not allocated these net proceeds for specific purposes. See “Use of Proceeds” for additional information. Investors will not have the opportunity, as part of their investment decision, to assess whether the proceeds are being used appropriately. Our use of the proceeds may not improve our operating results or increase the value of the securities being offered hereby.

***It is not possible to predict the aggregate proceeds resulting from sales made under the Sale Agreement.***

Subject to certain limitations in the Sale Agreement and compliance with applicable law, we have the discretion to deliver an issuance notice to Jefferies at any time throughout the term of the Sale Agreement. The number of shares that are sold through Jefferies after delivering an issuance notice will fluctuate based on a number of factors, including the market price of our common stock during the sales period, any limits we may set with Jefferies in any applicable issuance notice and the demand for our common stock. Because the price per share of each share sold pursuant to the Sale Agreement will fluctuate over time, it is not currently possible to predict the aggregate proceeds to be raised in connection with sales under the Sale Agreement.

***Shares of our common stock are subordinate to any preferred stock we may issue and to existing and any future indebtedness.***

Shares of our common stock rank junior to any shares of our senior preferred stock or shares of our senior preferred stock that we may issue in the future and to our existing indebtedness, including under our senior secured term loan agreement, and any future indebtedness we may incur, as well as to all creditor claims and other non-equity claims against us and our assets available to satisfy claims on us, including claims in a bankruptcy or similar proceeding. Our secured term loan agreement restricts, and any future indebtedness and preferred stock may restrict, payment of dividends on our common stock.

In February 2018, BVF Partners L.P., or BVF, elected to exchange 8.0 million shares of our common stock owned by BVF and 575 shares of our Series N Preferred Stock owned by BVF for 12,575 shares of our Series O Preferred Stock, pursuant to the exchange agreement executed in February 2018 as well as the letter agreements we entered into with BVF in connection with our Series N-2 Preferred Stock offering in 2015 and our Series N-3 Preferred Stock offering in 2017. As of June 30, 2022, 12,575 shares of our Series O Preferred Stock were issued and outstanding.

In March 2020, we completed a rights offering through the distribution of subscription rights to holders of our common stock and Series O Preferred Stock (the “Rights Offering”). Under the Rights Offering, we issued 4,429 shares of our Series X Preferred Stock, which shares of Series X Preferred Stock are convertible into 44.3 million shares of our common stock. As of June 30, 2022, 3,383 shares of our Series X Preferred Stock were issued and outstanding.

In April 2021, we issued 600 shares of our Series X<sup>1</sup> Preferred Stock, which are convertible into 6.0 million shares of our common stock. As of June 30, 2022, 600 shares of our Series X<sup>1</sup> Preferred Stock were issued and outstanding.

Furthermore, unlike indebtedness, where principal and interest customarily are payable on specified due dates, in the case of our common stock, (i) dividends are payable only when and if declared by our board of directors or a duly authorized committee of our board of directors, and (ii) as a corporation, we are restricted to making dividend payments and redemption payments out of legally available assets. We have never paid a dividend on our common stock and have no current intention to pay dividends in the future. Furthermore, our common stock places no restrictions on our business or operations or on our ability to incur indebtedness or engage in any transactions, subject only to the voting rights available to our shareholders generally.

## FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents we incorporate by reference in this prospectus supplement and the accompanying prospectus may contain certain statements that constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. When used in this in this prospectus supplement, the accompanying prospectus and the documents we incorporate by reference herein and therein, terms such as “anticipates,” “believes,” “continue,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “should,” or “will” or the negative of those terms or other comparable terms are intended to identify such forward-looking statements.

These forward-looking statements include, but are not limited to:

- our expectations regarding sufficiency of cash resources, cash expenditures, sources of cash flows and other projections, product manufacturing and sales, research and development expenses, selling, general and administrative expenses and additional losses;
- our ability to obtain funding for our operations;
- the commercialization of VONJO as a treatment for adult myelofibrosis patients with severe thrombocytopenia;
- our ability to develop, commercialize and obtain regulatory approval of pacritinib for other development programs we may pursue in the future;
- the design of our clinical trials and their anticipated enrollment;
- the safety, effectiveness and potential benefits and indications of VONJO and any other product candidates we may develop in the future;
- the rate and degree of market acceptance and clinical utility of VONJO or any other product candidates we may develop in the future;
- the timing of and results from clinical trials and pre-clinical development activities, including those related to VONJO and any other product candidates we may develop in the future;
- our ability to advance product candidates, including VONJO and any other product candidates we may develop in the future, into, and the successful completion of, clinical trials;
- our ability to achieve profitability, including our ability to effectively implement cost reduction strategies and realize anticipated cost savings from those efforts;
- our expectations regarding federal, state and foreign regulatory requirements;
- our and our collaborators’ ability to obtain and maintain regulatory approvals, and the timing of such approvals, for VONJO or any other product candidates we may develop in the future;
- our ability to maintain and establish collaborations;
- our expectations regarding market risk, including interest rate changes and foreign currency fluctuations;
- our ability to protect our intellectual property and operate our business without infringing upon the intellectual property rights of others;
- the impact of government laws and regulations;
- our ability to negotiate, integrate, and implement collaborations, acquisitions and other strategic transactions;
- our ability to engage and retain the employees required to advance our development activities and grow our business;

## Table of Contents

- developments relating to our competitors and our industry, including the success of competing therapies that are or become available;
- our expectations regarding business disruptions and related risks resulting from the ongoing worldwide coronavirus pandemic known as COVID-19; and
- other risks and uncertainties, including those listed under the heading Risk Factors and in other filings we periodically make with the U.S. Securities and Exchange Commission, or the SEC.

These statements are based on assumptions about many important factors and information currently available to us to the extent that we have thus far had an opportunity to fully and carefully evaluate such information in light of all surrounding facts, circumstances, recommendations and analyses. Additionally, these statements are subject to known and unknown risks and uncertainties, including, but not limited to, those discussed above and elsewhere in this prospectus supplement, the accompanying prospectus and the documents we incorporate by reference herein and therein. Although we believe that expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. These statements, like all statements in this report, speak only as of their date, and we undertake no obligation to update or revise these statements in light of future developments, except as required by law. Readers are cautioned not to place undue reliance on these forward-looking statements.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus supplement, and although we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted a thorough inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and you are cautioned not to unduly rely upon these statements.

## USE OF PROCEEDS

We currently plan to use the net proceeds from this offering for the continued commercialization of VONJO®, as well as for general corporate purposes and working capital. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. As a result, our management will have broad discretion to allocate the net proceeds of the offerings.

## DILUTION

Purchasers of common stock offered by this prospectus supplement and the accompanying prospectus will suffer immediate and substantial dilution in the net tangible book value per share of common stock. Our net tangible book deficit as of June 30, 2022 was approximately \$29.6 million, or approximately \$(0.26) per share of common stock. Net tangible book value per share represents the amount of total tangible assets less total liabilities, divided by the number of shares of our common stock outstanding as of June 30, 2022.

After giving effect to the assumed sale of shares of common stock in the aggregate amount of \$100.0 million at an assumed public offering price of \$5.79 per share, which was the last reported sale price of our common stock on Nasdaq on August 12, 2022, and after deducting the commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of June 30, 2022 would have been approximately \$67.1 million, or \$0.51 per share of common stock. This represents an immediate increase in net tangible book value of \$0.77 per share of common stock to our existing stockholders and an immediate dilution in net tangible book value of \$5.28 per share of common stock to new investors participating in this offering. The following table illustrates this dilution on a per share basis:

Assumed public offering price per share	\$ 5.79
Net tangible book deficit per share as of June 30, 2022	\$(0.26)
Increase in net tangible book value per share attributable to new investors in this offering	<u>\$ 0.77</u>
As adjusted net tangible book value per share as of June 30, 2022, after giving effect to this offering	<u>\$0.51</u>
Dilution per share to new investors participating in this offering	<u>\$5.28</u>

The above discussion and table are based on 114,130,834 shares of our common stock outstanding as of June 30, 2022 and excludes as of that date:

- 24,631,132 shares of common stock issuable upon exercise of options outstanding as of June 30, 2022, at a weighted-average exercise price of \$2.74 per share;
- 169,014 shares of common stock issuable upon the exercise of warrants outstanding as of June 30, 2022, at a weighted-average exercise price of \$2.84 per share;
- 6,000,000 shares of common stock issuable upon the conversion of 600 shares of Series X<sup>1</sup> Preferred Stock at a conversion price of \$2.50 per share;
- 33,830,000 shares of common stock issuable upon the conversion of 3,383 shares of Series X Preferred Stock at a conversion price of \$1.00 per share;
- 8,383,333 shares of common stock issuable upon the conversion of 12,575 shares of Series O Preferred Stock at a conversion price of \$3.00 per share;
- 963,858 shares of common stock reserved for issuance under our employee stock purchase plan; and
- 8,382,282 shares of common stock reserved for future issuance under our equity compensation plans.

To the extent that any options or warrants are exercised, convertible stock is exercised, new options are issued under our equity incentive plans, additional shares of common stock are sold under our employee stock purchase plan or we otherwise issue additional shares of common stock in the future, there will be further dilution to investors participating in this offering.

## PLAN OF DISTRIBUTION

We have entered into an Open Market Sale Agreement <sup>SM</sup> with Jefferies, under which we may offer and sell shares of common stock from time to time through Jefferies acting as agent. Pursuant to this prospectus supplement, we may offer and sell up to \$100.0 million of our shares of common stock. Sales of our shares of common stock, if any, under this prospectus supplement and the accompanying prospectus will be made by any method that is deemed to be an “at the market offering” as defined in Rule 415(a)(4) under the Securities Act.

Each time we wish to issue and sell our shares of common stock under the Sale Agreement, we will notify Jefferies of the number of shares to be issued, the dates on which such sales are anticipated to be made, any limitation on the number of shares to be sold in any one day and any minimum price below which sales may not be made. Once we have so instructed Jefferies, unless Jefferies declines to accept the terms of such notice, Jefferies has agreed to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such shares up to the amount specified on such terms. The obligations of Jefferies under the Sale Agreement to sell our shares of common stock are subject to a number of conditions that we must meet.

The settlement of sales of shares between us and Jefferies is generally anticipated to occur on the second trading day following the date on which the sale was made. Sales of our shares of common stock as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and Jefferies may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

We will pay Jefferies a commission equal to 3.0% of the aggregate gross proceeds we receive from each sale of our shares of common stock. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. In addition, we have agreed to reimburse Jefferies for the fees and disbursements of its counsel, payable upon execution of the Sale Agreement, in an amount not to exceed \$75,000, in addition to certain ongoing disbursements of its legal counsel, unless we and Jefferies otherwise agree. We estimate that the total expenses for the offering, excluding any commissions or expense reimbursement payable to Jefferies under the terms of the Sale Agreement, will be approximately \$300,000. The remaining sale proceeds, after deducting any other transaction fees, will equal our net proceeds from the sale of such shares.

Jefferies will provide written confirmation to us before the open on Nasdaq on the day following each day on which our shares of common stock are sold under the Sale Agreement. Each confirmation will include the number of shares sold on that day, the aggregate gross proceeds of such sales and the proceeds to us.

In connection with the sale of our shares of common stock on our behalf, Jefferies will be deemed to be an “underwriter” within the meaning of the Securities Act, and the compensation of Jefferies will be deemed to be underwriting commissions or discounts. We have agreed to indemnify Jefferies against certain civil liabilities, including liabilities under the Securities Act or the Exchange Act. We have also agreed to contribute to payments Jefferies may be required to make in respect of such liabilities.

The offering of our shares of common stock pursuant to the Sale Agreement will terminate upon the earlier of (i) the sale of all shares of common stock subject to the Sale Agreement and (ii) the termination of the Sale Agreement in accordance with its terms.

This summary of the material provisions of the Sale Agreement does not purport to be a complete statement of its terms and conditions. A copy of the Sale Agreement has been filed as an exhibit to our registration statement on Form S-3 of which this prospectus supplement forms a part.

Jefferies and its affiliates may in the future provide various investment banking, commercial banking, financial advisory and other financial services for us and our affiliates, for which services they may in the future receive customary fees. In the course of its business, Jefferies may actively trade our securities for its own account or for

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[Table of Contents](#)

the accounts of customers, and, accordingly, Jefferies may at any time hold long or short positions in such securities.

A prospectus supplement and the accompanying prospectus in electronic format may be made available on a website maintained by Jefferies, and Jefferies may distribute the prospectus supplement and the accompanying prospectus electronically.

## **LEGAL MATTERS**

The validity of the securities offered hereby will be passed upon for us by Gibson, Dunn & Crutcher LLP, San Francisco, California. Jefferies LLC is being represented in connection with this offering by Cooley LLP, New York, New York.

## **EXPERTS**

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2021 (which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern as described in Note 1 to the consolidated financial statements), as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

**WHERE YOU CAN FIND ADDITIONAL INFORMATION**

We file annual, quarterly and other reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at [www.sec.gov](http://www.sec.gov). Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge from our website at [www.ctibiopharma.com](http://www.ctibiopharma.com). These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on our website is not part of or incorporated by reference into this prospectus supplement or the accompanying prospectus.

## INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to another document that we have filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this prospectus supplement. We incorporate by reference the following information or documents that we have filed with the SEC (excluding those portions of any Form 8-K that are not deemed “filed” pursuant to the General Instructions of Form 8-K):

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2021, filed with the SEC on March 31, 2022;
- portions of the [proxy statement](#) for our 2022 annual meeting of shareholders, filed with the SEC on April 19, 2022, to the extent specifically incorporated by reference to our Annual Report on [Form 10-K](#) for the year ended December 31, 2021;
- our Quarterly Reports on Form 10-Q for the fiscal quarters ended [March 31, 2022](#) and [June 30, 2022](#), filed with the SEC on May 12, 2022 and August 8, 2022, respectively;
- our Current Reports on Form 8-K filed with the SEC on [March 2, 2022](#), [March 4, 2022](#), [June 3, 2022](#) and [August 15, 2022](#); and
- the description of our capital stock contained in our Registration Statement on [Form 10](#) filed with the SEC on June 27, 1996, as amended.

We also incorporate by reference into this prospectus supplement additional documents that we may file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the completion or termination of the offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information deemed furnished and not filed with the SEC. Any statements contained in a previously filed document incorporated by reference into this prospectus supplement is deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement, or in a subsequently filed document also incorporated by reference herein, modifies or supersedes that statement.

We will provide to each person, including any beneficial owner, to whom this prospectus supplement is delivered, upon written or oral request, at no cost to the requester, a copy of any and all of the information that is incorporated by reference in this prospectus supplement.

Requests for such documents should be directed to:

CTI BioPharma Corp.  
3101 Western Avenue, Suite 800  
Seattle, WA 98121  
(206) 282-7100  
Attention: Investor Relations

You may also access the documents incorporated by reference in this prospectus supplement through our website at [www.ctibiopharma.com](http://www.ctibiopharma.com). Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus supplement, the accompanying prospectus or the registration statement of which it forms a part.



**Up to \$100,000,000**

**Common Stock**

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**PROSPECTUS SUPPLEMENT**

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**Jefferies**

, 2022

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**PART II**  
**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 14. Other Expenses of Issuance and Distribution**

The following table sets forth an estimate of the fees and expenses payable by the registrant in connection with the offering described in this registration statement.

Securities and Exchange Commission registration fee	\$8,285**
Printing fees and expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Trustee fees and expenses	*
Blue Sky fees and expenses	*
Transfer Agent fees and expenses	*
Miscellaneous expenses	*
Total	\$ *

\* These fees and expenses depend on the securities offered and the number of issuances and, accordingly, cannot be estimated at this time.

\*\* Reflects an offset for funds previously paid with respect to unused securities under a prior registration statement.

**Item 15. Indemnification of Directors and Officers**

Section 145 of the Delaware General Corporation Law, or the DGCL, authorizes a corporation to indemnify its directors and officers against liabilities arising out of actions, suits and proceedings to which they are made or threatened to be made a party by reason of the fact that they have served or are currently serving as a director or officer to a corporation. The indemnity may cover expenses (including attorneys' fees) judgments, fines and amounts paid in settlement actually and reasonably incurred by the director or officer in connection with any such action, suit or proceeding. Section 145 permits corporations to pay expenses (including attorneys' fees) incurred by directors and officers in advance of the final disposition of such action, suit or proceeding. In addition, Section 145 provides that a corporation has the power to purchase and maintain insurance on behalf of its directors and officers against any liability asserted against them and incurred by them in their capacity as a director or officer, or arising out of their status as such, whether or not the corporation would have the power to indemnify the director or officer against such liability under Section 145.

We have adopted provisions in our certificate of incorporation and bylaws that limit or eliminate the personal liability of our directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any unlawful payments related to dividends or unlawful stock purchases, redemptions or other distributions; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

## Table of Contents

In addition, our bylaws provide that:

- we will indemnify our directors, officers and, in the discretion of our Board of Directors, certain employees to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and
- we will advance reasonable expenses, including attorneys' fees, to our directors and, in the discretion of our Board of Directors, to our officers and certain employees, in connection with legal proceedings relating to their service for or on behalf of us, subject to limited exceptions.

We have entered into indemnification agreements with each of our directors and certain of our executive officers. These agreements provide that we will indemnify each of these directors and executive officers to the fullest extent permitted by Delaware law. We will advance expenses, including attorneys' fees, judgments, fines and settlement amounts, to each indemnified director, executive officer or affiliate in connection with any proceeding in which indemnification is available and we will indemnify our directors and officers for any action or proceeding arising out of that person's services as an officer or director brought on behalf of the Company or in furtherance of our rights.

We maintain general liability insurance that covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act.

### **Item 16. Exhibits and Financial Statement Schedules**

A list of exhibits filed herewith is contained in the exhibit index that and is incorporated herein by reference.

<b>Exhibit Number</b>	<b>Description</b>
1.1*	Underwriting Agreement.
1.2	<a href="#">Open Market Sale Agreement<sup>SM</sup>, dated as of August 16, 2022, by and between CTI BioPharma Corp. and Jefferies LLC.</a>
4.1	<a href="#">Specimen Common Stock Certificate (incorporated by reference to exhibit 4.1 to the Company's Form 8-K filed on February 12, 2018).</a>
4.2	<a href="#">Warrant to Purchase Stock, dated November 28, 2017, by and between CTI BioPharma Corp. and Silicon Valley Bank (incorporated by reference to exhibit 4.1 to the Company's Form 8-K filed on November 28, 2017).</a>
4.3	<a href="#">Warrant to Purchase Stock, dated November 28, 2017, by and between CTI BioPharma Corp. and Life Science Loans II, LLC (incorporated by reference to exhibit 4.2 to the Company's Form 8-K filed on November 28, 2017).</a>
4.4*	Form of Article of Amendment—Designation of Preferences, Rights and Limitations of Preferred Stock.
4.5*	Form of Common Stock Warrant Agreement and Warrant Certificate.
4.6*	Form of Preferred Stock Warrant Agreement and Warrant Certificate.
4.7*	Form of Debt Securities Warrant Agreement and Warrant Certificate.
4.8*	Form of Senior Note.
4.9*	Form of Subordinated Note.
4.10*	Form of Rights Agreement and Rights Certificate.

## Table of Contents

<u>Exhibit Number</u>	<u>Description</u>
4.11*	Form of Unit Agreement.
5.1	<a href="#">Opinion of Gibson, Dunn &amp; Crutcher LLP, relating to the base prospectus.</a>
5.2	<a href="#">Opinion of Gibson, Dunn &amp; Crutcher LLP, relating to the sales agreement prospectus supplement.</a>
23.1	<a href="#">Consent of Ernst &amp; Young LLP, Independent Registered Public Accounting Firm.</a>
23.2	<a href="#">Consent of Gibson, Dunn &amp; Crutcher LLP (included in Exhibit 5.1).</a>
24.1	<a href="#">Power of Attorney (included on signature page hereto).</a>
25.1**	Form T-1 Statement of Eligibility of Trustee for Senior Indenture under the Trust Indenture Act of 1939, as amended.
25.2**	Form T-1 Statement of Eligibility of Trustee for Subordinated Indenture under the Trust Indenture Act of 1939, as amended.
107	<a href="#">Filing Fee Table</a>

\* To be filed by amendment to this registration statement or as an exhibit to a Current Report on Form 8-K and incorporated herein by reference, if applicable.

\*\* To be filed in accordance with the requirements of Section 305(b)(2) of the Trust Indenture Act of 1939.

### **Item 17. Undertakings**

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

*provided, however,* that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

## Table of Contents

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
- (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
- (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities: The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (6) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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[Table of Contents](#)

(7) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

(8) The undersigned registrant hereby undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Act.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Seattle, State of Washington, on this 16th day of August, 2022.

### CTI BIOPHARMA CORP.

By: /s/ Adam R. Craig

Adam R. Craig, M.D., Ph.D.  
President, Chief Executive Officer and Interim Chief  
Medical Officer

## POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that the undersigned officers and directors of CTI BioPharma Corp., a Delaware corporation, do hereby constitute and appoint Adam R. Craig, M.D., Ph.D. and David H. Kirske, and each of them individually, as his or her true and lawful attorneys-in-fact and agents, each with full power of substitution or re-substitution, with full power and authority to do any and all acts and things in our name and on our behalf in our capacities as officers and directors and to execute any and all instruments for us and in our names in the capacities indicated below which said attorneys-in-fact and agents, or either one of them, determine may be necessary or advisable or required to enable said corporation to comply with the Securities Act of 1933, as amended, and any rules or regulations or requirements of the Securities and Exchange Commission in connection with this registration statement. Without limiting the generality of the foregoing power and authority, the powers granted include the power and authority to sign the names of the undersigned officers and directors in the capacities indicated below to this registration statement, to any and all amendments, both pre-effective and post-effective, and supplements to this registration statement, including post-effective amendments or any abbreviated registration statement and any amendments thereto filed pursuant to Rule 462(b) increasing the number of securities for which registration is sought, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, and to any and all instruments or documents filed as part of or in conjunction with this registration statement or supplements thereto, and each of the undersigned hereby ratifies and confirms all that said attorneys-in-fact and agents, or either one of them, shall do or cause to be done by virtue hereof. This power of attorney may be signed in several counterparts.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Adam R. Craig</u> Adam R. Craig, M.D., Ph.D.	President, Chief Executive Officer, Interim Chief Medical Officer and Director (Principal Executive Officer)	August 16, 2022
<u>/s/ David H. Kirske</u> David H. Kirske	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	August 16, 2022
<u>/s/ Laurent Fischer</u> Laurent Fischer, M.D.	Chairman of the Board and Director	August 16, 2022

[Table of Contents](#)

<hr/> <i>/s/ Michael A. Metzger</i> Michael A. Metzger	Director	August 16, 2022
<hr/> <i>/s/ David Parkinson</i> David Parkinson, M.D.	Director	August 16, 2022
<hr/> <i>/s/ Diane Parks</i> Diane Parks	Director	August 16, 2022
<hr/> <i>/s/ Matthew D. Perry</i> Matthew D. Perry	Director	August 16, 2022
<hr/> <i>/s/ Reed V. Tuckson</i> Reed V. Tuckson, M.D.	Director	August 16, 2022

OPEN MARKET SALE AGREEMENT<sup>SM</sup>

August 16, 2022

JEFFERIES LLC  
520 Madison Avenue  
New York, New York 10022

Ladies and Gentlemen:

CTI BioPharma Corp., a Delaware corporation (the “**Company**”), proposes, subject to the terms and conditions stated herein, to issue and sell from time to time through Jefferies LLC, as sales agent and/or principal (the “**Agent**”), shares of the Company’s common stock, par value \$0.001 per share (the “**Common Shares**”), on the terms set forth in this agreement (this “**Agreement**”).

**Section 1. DEFINITIONS**

(a) Certain Definitions. For purposes of this Agreement, capitalized terms used herein and not otherwise defined shall have the following respective meanings:

“**Affiliate**” of a Person means another Person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such first- mentioned Person. The term “**control**” (including the terms “controlling,” “controlled by” and “under common control with”) means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

“**Agency Period**” means the period commencing on the date of this Agreement and expiring on the earlier to occur of (x) the date on which the Agent shall have placed the Maximum Program Amount pursuant to this Agreement and (y) the date this Agreement is terminated pursuant to Section 7.

“**Commission**” means the U.S. Securities and Exchange Commission.

“**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission thereunder.

“**Floor Price**” means the minimum price set by the Company in the Issuance Notice below which the Agent shall not sell Shares during the applicable period set forth in the Issuance Notice, which may be adjusted by the Company at any time during the period set forth in the Issuance Notice by delivering written notice of such change to the Agent.

“**Issuance Amount**” means the aggregate Sales Price of the Shares to be sold by the Agent pursuant to any Issuance Notice.

“**Issuance Notice**” means a written notice delivered to the Agent by the Company in accordance with this Agreement in the form attached hereto as Exhibit A that is executed by its Chief Executive Officer, President or Chief Financial Officer.

“**Issuance Notice Date**” means any Trading Day during the Agency Period that an Issuance Notice is delivered pursuant to Section 3(b)(i).

“**Issuance Price**” means the Sales Price, less the Selling Commission per Share.

“**Maximum Program Amount**” means Common Shares with an aggregate Sales Price of the least of (a) the number or dollar amount of Common Shares the sale of which is registered under the effective Registration Statement (defined below) pursuant to which the offering is being made, (b) the number of authorized but unissued Common Shares (less Common Shares issuable upon exercise, conversion or exchange of any outstanding securities of the Company or otherwise reserved from the Company’s authorized capital stock), (c) the number or dollar amount of Common Shares permitted to be sold under Form S-3 (including General Instruction I.B.6 thereof, if applicable), or (d) the number or dollar amount of Common Shares for which the Company has filed a Prospectus (defined below).

“**Open Market Sale Agreement**” is a service mark of Jefferies LLC.

“**Person**” means an individual or a corporation, partnership, limited liability company, trust, incorporated or unincorporated association, joint venture, joint stock company, governmental authority or other entity of any kind.

“**Principal Market**” means the Nasdaq Capital Market or such other national securities exchange on which the Common Shares, including any Shares, are then listed.

“**Sales Price**” means the actual sale execution price of each Share placed by the Agent pursuant to this Agreement.

“**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations of the Commission thereunder.

“**Selling Commission**” means three percent (3.0%) of the gross proceeds of Shares sold pursuant to this Agreement, or as otherwise agreed between the Company and the Agent with respect to any Shares sold pursuant to this Agreement.

“**Settlement Date**” means the second business day following each Trading Day during the period set forth in the Issuance Notice on which Shares are sold pursuant to this Agreement, when the Company shall deliver to the Agent the amount of Shares sold on such Trading Day and the Agent shall deliver to the Company the Issuance Price received on such sales.

“**Shares**” means the Company’s Common Shares issued or issuable pursuant to this Agreement.

“**Trading Day**” means any day on which the Principal Market is open for trading.

## Section 2. REPRESENTATIONS AND WARRANTIES OF THE COMPANY

The Company represents and warrants to, and agrees with, the Agent that, unless such representation, warranty or agreement specifies otherwise, as of (1) the date of this Agreement, (2) each Issuance Notice Date, (3) each Settlement Date, (4) each Triggering Event Date with respect to which the Company is required to deliver a certificate pursuant to Section 4(g) and (5) as of each Time of Sale (each of the times referenced above is referred to herein as a “**Representation Date**”), except as may be disclosed in the Prospectus (including any documents incorporated by reference therein and any supplements thereto) on or before a Representation Date:

(a) Registration Statement. The Company has prepared and filed, or will file, with the Commission a shelf registration statement on Form S-3 that contains a base prospectus (the “**Base Prospectus**”). Such registration statement registers the issuance and sale by the Company of the Shares under the Securities Act. Except where the context otherwise requires, such registration statement(s), including any information deemed to be a part thereof pursuant to Rule 430B under the Securities Act, including all financial statements, exhibits and schedules thereto and all documents incorporated or deemed to be incorporated therein by reference pursuant to Item 12 of Form S-3 under the Securities Act as from time to time amended or supplemented, is herein referred to as the “**Registration Statement**,” and the prospectus constituting a part of such registration statement(s), together with any prospectus supplement filed with the Commission pursuant to Rule 424(b) under the Securities Act relating to a particular issuance of the Shares, including all documents incorporated or deemed to be incorporated therein by reference pursuant to Item 12 of Form S-3 under the Securities Act, in each case, as from time to time amended or supplemented, is referred to herein as the “**Prospectus**,” except that if any revised prospectus is provided to the Agent by the Company for use in connection with the offering of the Shares that is not required to be filed by the Company pursuant to Rule 424(b) under the Securities Act, the term “**Prospectus**” shall refer to such revised prospectus from and after the time it is first provided to the Agent for such use. The Registration Statement at the time it originally became effective is herein called the “**Original Registration Statement**.” As used in this Agreement, the terms “amendment” or “supplement” when applied to the Registration Statement or the Prospectus shall be deemed to include the filing by the Company with the Commission of any document under the Exchange Act after the date hereof that is or is deemed to be incorporated therein by reference. If prior to the third anniversary of the initial effective date of the Registration Statement, (i) any of the Shares remain unsold, (ii) the Company has filed and caused to be declared effective a registration statement relating to the Shares in a form reasonably satisfactory to the Agent and (iii) the Company shall have taken all action reasonably necessary or appropriate to permit the issuance and sale of the Shares to continue as contemplated herein, including through the filing of a new prospectus relating to the Shares in a form reasonably satisfactory to the Agent, references herein to the Registration Statement shall be deemed to be to such new shelf registration statement.

All references in this Agreement to financial statements and schedules and other information which is “contained,” “included” or “stated” in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information which is or is deemed to be incorporated by reference in or otherwise deemed under the Securities Act to be a part of or included in the Registration Statement or the Prospectus, as the case may be, as of any specified date; and all references in this Agreement to amendments or supplements to the Registration Statement or the

Prospectus shall be deemed to mean and include, without limitation, the filing of any document under the Exchange Act which is or is deemed to be incorporated by reference in or otherwise deemed under the Securities Act to be a part of or included in the Registration Statement or the Prospectus, as the case may be, as of any specified date. The Company's obligations under this Agreement to furnish, provide or deliver or make available (and all other similar references) copies of any report or statement shall be deemed satisfied if the same is filed with the Commission through its Electronic Data Gathering, Analysis and Retrieval system ("EDGAR").

At the time the Original Registration Statement was or will be declared effective and at the time the Company's most recent annual report on Form 10-K was filed with the Commission, if later, the Company met the then-applicable requirements for use of Form S-3 under the Securities Act. During the Agency Period, each time the Company files an annual report on Form 10-K the Company will meet the then-applicable requirements for use of Form S-3 under the Securities Act. The proposed sale of the Shares hereunder meets the requirements of General Instructions I.B.1 and I.B.6 of Form S-3.

(b) Compliance with Registration Requirements. The Original Registration Statement and any Rule 462(b) Registration Statement have been declared effective by the Commission under the Securities Act or shall be declared effective by the Commission under the Securities Act prior to the issuance of any Issuance Notice by the Company. The Company has complied to the Commission's satisfaction with all requests of the Commission for additional or supplemental information in connection therewith, if any. No stop order suspending the effectiveness of the Registration Statement, or any post-effective amendment thereto, or the Rule 462(b) Registration Statement, if any, is in effect and no proceedings for such purpose have been instituted or are pending or, to the knowledge of the Company, are contemplated or threatened by the Commission.

The Prospectus when filed complied and, as amended or supplemented, if applicable, will comply in all material respects with the Securities Act and, if filed with the Commission through EDGAR (except as may be permitted by Regulation S-T under the Securities Act), was identical to the copy thereof delivered to the Agent for use in connection with the issuance and sale of the Shares. Each of the Registration Statement, any Rule 462(b) Registration Statement and any post-effective amendment or supplement thereto, at the time it became or becomes effective, at each Time of Sale (as defined below), if any, and as of each Settlement Date, if any, complied and will comply in all material respects with the Securities Act and did not and will not contain any 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 not misleading. As of the date of this Agreement, the Prospectus and any Free Writing Prospectus (as defined below) considered together (collectively, the "**Time of Sale Information**") did not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading. The Prospectus, as amended or supplemented, as of its date, at each Time of Sale (as defined below), if any, and as of each Settlement Date, if any, did not and will not contain any untrue statement of a material fact or 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. The representations and warranties set forth in the three immediately preceding sentences do not apply to statements in or omissions from the Registration

Statement, any Rule 462(b) Registration Statement, or any post-effective amendment thereto, or the Prospectus, or any amendments or supplements thereto, made in reliance upon and in conformity with information relating to the Agent furnished to the Company in writing by the Agent expressly for use therein, it being understood and agreed that the only such information furnished by the Agent to the Company consists of the information described in Section 6 below. There are no contracts or other documents required to be described in the Prospectus or to be filed as exhibits to the Registration Statement which have not been described or filed as required. The Registration Statement and the offer and sale of the Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said rule. The Company has delivered to the Agent conformed copies of the Prospectus, as amended or supplemented, in such quantities and at such places as the Agent has reasonably requested.

(c) Ineligible Issuer Status. The Company is not an “ineligible issuer” in connection with the offering of the Shares pursuant to Rules 164, 405 and 433 under the Securities Act. Any 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 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 Free Writing Prospectus, as of its issue date, at each Time of Sale (as defined below), if any, and as of each Settlement Date, if any did not and will not include any information that conflicted, conflicts with or will conflict with the information contained in the Registration Statement or the Prospectus, including any document incorporated by reference therein. Except for the Free Writing Prospectuses, if any, and electronic road shows, if any, furnished to the Agent before first use, the Company has not prepared, used or referred to, and will not, without the Agent’s prior consent, prepare, use or refer to, any Free Writing Prospectus.

(d) Incorporated Documents. The documents incorporated or deemed to be incorporated by reference in the Registration Statement 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.

(e) 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 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, at each relevant time Shares are sold pursuant to this Agreement (each, a “**Time of Sale**”) and on each Settlement Date, 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 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.

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

(g) 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; (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) the Company's principal executive officer and principal financial officer have concluded, as of the end of such fiscal quarter, are effective. Except as otherwise disclosed in the Registration Statement and the Prospectus, since the end of the Company's most recent audited fiscal year, there have been no significant deficiencies or material weaknesses 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.

(h) This Agreement. This Agreement has been duly authorized, executed and delivered by, and is a valid and binding agreement of, the Company, enforceable in accordance with its terms, except as rights to indemnification hereunder may be limited by applicable law and except as the enforcement hereof may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting the rights and remedies of creditors or by general equitable principles.

(i) Authorization of the Shares. The Shares, when issued and delivered, will be 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 duly authorized, validly issued, fully paid and nonassessable, and the issuance and sale of the Shares is not subject to any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase the Shares.

(j) 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.

(k) No Material Adverse Change. Except as otherwise disclosed in the Registration Statement and the Prospectus, subsequent to the respective dates as of which information is given in the Registration Statement and the Prospectus: (i) there has been no material adverse change, or any development that could reasonably be expected to result in a material adverse change, in the condition, financial or otherwise, or in the earnings, business, properties, operations, or prospects, whether or not arising from transactions in the ordinary course of business, of the Company and its subsidiaries, considered as one entity (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, not in the ordinary course of business nor entered into any material transaction or agreement not in the ordinary course of business; and (iii) there has not been 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.

(l) Independent Accountants. As of the date of this Agreement, Ernst & Young LLP or other accountants (the "**Accountants**"), which has expressed its opinion with respect to the financial statements (which term as used in this Agreement includes the related notes thereto) and supporting schedules filed with the Commission as a part of and incorporated by reference into the Registration Statement 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.

(m) Financial Statements. The financial statements (including the related notes thereto) of the Company and its consolidated subsidiaries incorporated by reference in the Registration Statement and the Prospectus present fairly in all material respects the consolidated financial position of the Company and its consolidated subsidiaries as of the dates indicated and the results of their operations and the changes in their cash flows for the periods specified; such financial statements have been prepared in conformity with generally accepted accounting principles as applied in the United States applied on a consistent basis throughout the periods covered thereby, except unaudited financial statements, which are subject to normal year-end adjustment 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 or Prospectus. The financial data set forth or incorporated by reference in the Registration Statement and the Prospectus fairly present in all material respects the information set forth therein on a basis consistent with that of the audited financial statements contained, incorporated by reference or deemed to be incorporated by reference in the Registration Statement and 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 and the Prospectus.

(n) Company's Accounting System. The Company and each of its subsidiaries make and keep accurate books and records and maintain a system of internal accounting controls sufficient 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 generally accepted accounting principles as applied in the United States 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 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.

(o) 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 State of Delaware and has corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement 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 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 be so qualified or in good standing could not reasonably be expected, individually or in the aggregate, to have a Material Adverse Change. 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 requisite power and authority (corporate or otherwise) to own, lease and operate its properties and to conduct its business as described in the Registration Statement and the Prospectus, except where the failure to be in good standing could not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change.

(p) Subsidiaries. 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, except where the failure to be so qualified or in good standing could not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. 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, except as disclosed in the Registration Statement and the Prospectus, are owned by the Company, directly or through subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance or adverse claim. As of the date of this Agreement, the Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Company's most recent Annual Report on Form 10-K and CTI Life Sciences Deutschland GmbH.

(q) Capitalization and Other Capital Stock Matters. The authorized, issued and outstanding capital stock of the Company is as set forth in the Registration Statement and the Prospectus (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 and the Prospectus, or which the Registration Statement and the Prospectus otherwise contemplate will occur or as otherwise permitted hereunder). The Common Shares (including the

Shares) conform in all material respects to the description thereof contained in the Registration Statement and the Prospectus. All of the issued and outstanding Common Shares have been duly authorized and validly issued, are fully paid and nonassessable and have been issued in compliance with all federal and state securities laws. None of the outstanding Common Shares 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 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 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.

(r) Stock Exchange Listing. Except as otherwise disclosed in the Registration Statement and the Prospectus, the Common Shares are registered pursuant to Section 12(b) of the Exchange Act and 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 Shares under the Exchange Act or delisting the Common Shares 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. Except as otherwise disclosed in the Registration Statement and the Prospectus, to the Company's knowledge, it is in compliance in all material respects with all applicable listing requirements of the Principal Market.

(s) 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, partnership agreement or operating agreement 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 could not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. The Company's execution, delivery and performance of this Agreement and consummation of the transactions contemplated hereby and by the Registration Statement and the Prospectus and the issuance and sale of the Shares (including the use of proceeds from the sale of the Shares as described in the Registration Statement and the Prospectus under the caption "**Use of Proceeds**") and compliance by the Company with the terms and provisions thereof (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, partnership agreement or operating agreement 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, except, in the case of clause (ii), for such conflicts, breaches or Defaults as could not be expected, individually or in the aggregate, to result in a Material Adverse Change. 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 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 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.

(t) No Material Actions or Proceedings. Except as otherwise disclosed in the Registration Statement or the Prospectus, there is no action, suit, proceeding, inquiry, or investigation brought by or before any governmental entity, now pending or, to the knowledge of the Company, threatened, against or affecting the Company or any of its subsidiaries, which could reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change or materially and adversely affect the consummation of the transactions contemplated by this Agreement or the performance by the Company of its obligations hereunder. No material labor dispute with the employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is threatened or imminent.

(u) Intellectual Property Rights. 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 and the Prospectus as being owned or licensed by them or which are reasonably necessary for the conduct of their respective businesses as currently conducted or as currently proposed to be conducted as disclosed in the Registration Statement and the Prospectus (collectively, "**Intellectual Property**"). To the Company's knowledge: (i) there are no third parties who have rights to any Intellectual Property, except for rights retained by third-party licensors with respect to Intellectual Property as licensed to the Company or one or more of its subsidiaries; and (ii) there is no material 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 (except in rejections of patent or trademark applications in the normal course of prosecution at the United States Patent and Trademark Office and equivalent foreign patent and trademark offices that would not, individually or in the aggregate, result in a Material Adverse Change), 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 or otherwise violates, or would, upon the commercialization of any product or service described in the Registration Statement or the Prospectus as under development, infringe 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 in all material respects 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. The product candidates described in the Registration Statement and the Prospectus as under development by the Company or any subsidiary fall within the scope of the claims of one or more patents owned by, or licensed to, the Company or any subsidiary.

(v) All Necessary Permits, etc. The Company and its subsidiaries possess such valid and current certificates, authorizations 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 or the Prospectus (“**Permits**”), except those Permits with respect to which the failure to so possess could not reasonably be expected, individually or in the aggregate, to result in 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 modification of, or non-compliance with, any such Permit which, individually or in the aggregate with any other violations, defaults or proceedings, if the subject of an unfavorable decision, ruling or finding, could reasonably be expected to result in a Material Adverse Change.

(w) Tax Law Compliance. The Company and its subsidiaries have filed all necessary federal, state and foreign income and franchise 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, and except for such exceptions as could not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. The Company has made adequate charges, accruals and reserves in the applicable financial statements referred to in Section 2(m) above in respect of all federal, state and foreign income and franchise taxes for all periods as to which the tax liability of the Company or any of its subsidiaries has not been finally determined.

(x) Company Not an “Investment Company.” The Company has been advised of the rules and requirements under the Investment Company Act of 1940, as amended (the “**Investment Company Act**”). The Company is not, and will not be, either after receipt of payment for the Shares or after the application of the proceeds therefrom as described under “Use of Proceeds” in the Registration Statement or the Prospectus, required to register as an “investment company” under the Investment Company Act.

(y) Insurance. Each of the Company and its subsidiaries maintain insurance policies in such amounts and with such deductibles and covering such risks as are adequate and customary for their businesses including, but not limited to, policies covering the Company and its subsidiaries for product liability claims and clinical trial liability claims. The Company does not 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 could not reasonably be expected to result in a Material Adverse Change. In the last three years, neither the Company nor any of its subsidiaries has been denied any insurance coverage which it has sought or for which it has applied.

(z) No Price Stabilization or Manipulation; Compliance with Regulation M. Neither the Company nor any of its subsidiaries has taken or will take, directly or indirectly, any action designed to or that might be reasonably expected to cause or result in stabilization or manipulation of the price of the Shares or of any “reference security” (as defined in Rule 100 of Regulation M under the Exchange Act (“**Regulation M**”)) with respect to the Shares, whether to facilitate the sale or resale of the Shares or otherwise, and has taken no action which would directly or indirectly violate Regulation M.

(aa) 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 or Prospectus that have not been described as required.

(bb) 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 Shares is true, complete, correct and compliant in all material respects with FINRA 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 in all material respects. The Company meets the definition of the term “experienced issuer” specified in FINRA Rule 5110(j)(6).

(cc) No Unlawful Contributions or Other Payments. Neither the Company nor any of its subsidiaries nor, to 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 law or of the character required to be disclosed in the Registration Statement or the Prospectus.

(dd) Compliance with Environmental Laws. Except as could 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 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) to the Company’s knowledge, there are no events or circumstances that could 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.

(ee) ERISA Compliance. Except as otherwise disclosed in Registration Statement or the Prospectus or as individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Change, the Company and its subsidiaries and any “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. “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. 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. 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). Neither the Company, its subsidiaries nor any of their ERISA Affiliates has incurred or reasonably expects to incur any material liability under (i) Title IV of ERISA with respect to termination of, or withdrawal from, any “employee benefit plan” or (ii) 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 is so qualified and has a favorable determination or opinion letter from the U.S. Internal Revenue Service upon which it can rely, and any such determination or opinion letter remains in effect and has not been revoked.

(ff) Brokers. Except pursuant to this Agreement or as described in the Registration Statement 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.

(gg) 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 could not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change.

(hh) No Reliance. The Company has not relied upon the Agent or legal counsel for the Agent for any legal, tax or accounting advice in connection with the offering and sale of the Shares.

(ii) Anti-Corruption and Anti-Bribery Laws. Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, or employee of the Company or any of its subsidiaries, or 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.

(jj) 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.

(kk) Clinical Data and Regulatory Compliance. The preclinical tests and clinical trials that are described in, or the results of which are referred to in, the Registration Statement or the Prospectus were and, if still pending, are being conducted in all material respects in accordance with the protocols, procedures and controls filed with the appropriate regulatory authorities for each such test or trial, as the case may be, and with standard medical and scientific research procedures; each description of the results of such tests and trials contained in the Registration Statement or the Prospectus is accurate and complete in all material respects and fairly presents in all material respects the data derived from such tests and trials, and the Company and its subsidiaries have no knowledge of any other studies or tests the results of which are inconsistent with, or otherwise call into question, the results described or referred to in the Registration Statement or the Prospectus; neither the Company nor any of its subsidiaries has received any notices or other correspondence from 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 (collectively, the “**Regulatory Agencies**”) requiring the termination, suspension or modification of any clinical trials that are described or referred to in the Registration Statement 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.

(ll) Sanctions. Neither the Company nor any of its subsidiaries, nor, to the knowledge of the Company, any director, officer, employee, 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 or the U.S. Department of State, the United Nations Security Council, the European Union, Her Majesty’s Treasury of the United Kingdom, or other applicable 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, Crimea, Cuba, Iran, North Korea and Syria, so-called Donetsk People’s Republic and so-called Lukansk People’s Republic (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 known to the Company, after reasonable investigation, to be currently subject to, or in or with any country or territory, that at the time of such financing, is the subject or the target of 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.

(mm) Cybersecurity. Except as could not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change, (i) the Company and its subsidiaries’ information technology assets and equipment, computers, systems, networks, hardware, software, websites, applications, and databases (collectively, “IT Systems”) 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, free and clear of all material bugs, errors, defects, Trojan horses, time bombs, malware and other corruptants; and (ii) the Company and its subsidiaries have at all times in the past five years implemented and maintained commercially reasonable physical, technical and administrative controls, policies, procedures, and safeguards designed to maintain and protect their material confidential information and the integrity, operation, redundancy and security of all IT Systems and confidential 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 GDPR (as defined below); (iv) 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 is related to an identified person’s health or sexual orientation. Except as could not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change, in the past five years, there have been no breaches, violations, outages or unauthorized uses of or accesses to such IT Systems or confidential data, including Personal Data, except for those that have been remedied without material cost or liability or the duty to notify any other person. The Company and its subsidiaries are presently in material compliance with all applicable laws or statutes and all applicable judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, and all of the Company’s and its subsidiaries’ internal policies and contractual obligations, relating to the privacy and security of such IT Systems and Personal Data and to the protection of such IT Systems and Personal Data from unauthorized use, access, misappropriation or modification.

(nn) Compliance with Data Privacy Laws. The Company and its subsidiaries are, and at all prior times in the past five years were, in material compliance with all applicable state, federal

and foreign data privacy and security laws and regulations, including without limitation HIPAA and the European Union General Data Protection Regulation (EU 2016/679) (“**GDPR**”), in each case, as applicable (collectively, the “**Privacy Laws**”). To comply with the Privacy Laws, the Company and its subsidiaries have in place and take 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 Company and its subsidiaries have at all times in the past five years made all disclosures to users or customers required for material compliance with the Privacy Laws, and none of such disclosures have, to the knowledge of the Company, been inaccurate or in violation of any Privacy Laws in any material respect. The Company has no knowledge of, and has not in the past five years received written, or to its knowledge, any other notice of, any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws, except as could not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Change. The Company is not (i) currently conducting or paying for, in whole or in part, any investigation, remediation, or other corrective action pursuant to any Privacy Law; nor (ii) a party to any order, decree, or agreement by or with any governmental authority that imposes any obligation or liability under any Privacy Law.

(oo) Other Underwriting Agreements. The Company is not a party to any agreement with an agent or underwriter for any other “at the market” or continuous equity transaction.

Any certificate signed by any officer or representative of the Company or any of its subsidiaries and delivered to the Agent or counsel for the Agent in connection with an issuance of Shares shall be deemed a representation and warranty by the Company to the Agent as to the matters covered thereby on the date of such certificate.

The Company acknowledges that the Agent and, for purposes of the opinions to be delivered pursuant to Section 4(r) hereof, counsel to the Company and counsel to the Agent, will rely upon the accuracy and truthfulness of the foregoing representations and hereby consents to such reliance.

### **Section 3. ISSUANCE AND SALE OF COMMON SHARES**

(a) Sale of Securities. On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company and the Agent agree that the Company may from time to time seek to sell Shares through the Agent, acting as sales agent, or directly to the Agent, acting as principal, as follows, with an aggregate Sales Price of up to the Maximum Program Amount, based on and in accordance with Issuance Notices as the Company may deliver, during the Agency Period.

(b) Mechanics of Issuances.

(i) Issuance Notice. Upon the terms and subject to the conditions set forth herein, on any Trading Day during the Agency Period on which the conditions set forth in Section 5(a) and Section 5(b) shall have been satisfied, the Company may exercise its right to request an issuance of Shares by delivering to the Agent an Issuance Notice; provided, however, that (A) in no event may the Company deliver an Issuance Notice to the extent that (I) the sum of (x) the

aggregate Sales Price of the requested Issuance Amount, plus (y) the aggregate Sales Price of all Shares issued under all previous Issuance Notices effected pursuant to this Agreement, would exceed the Maximum Program Amount; and (B) prior to delivery of any Issuance Notice, the period set forth for any previous Issuance Notice shall have expired or been terminated. An Issuance Notice shall be considered delivered on the Trading Day that it is received by e-mail to the persons set forth in Schedule A hereto and confirmed by the Company by telephone (including a voicemail message to the persons so identified), with the understanding that, with adequate prior written notice, the Agent may modify the list of such persons from time to time.

(ii) Agent Efforts. Upon the terms and subject to the conditions set forth in this Agreement, upon the receipt of an Issuance Notice, the Agent will use its commercially reasonable efforts consistent with its normal sales and trading practices to place the Shares with respect to which the Agent has agreed to act as sales agent, subject to, and in accordance with the information specified in, the Issuance Notice, unless the sale of the Shares described therein has been suspended, cancelled or otherwise terminated in accordance with the terms of this Agreement. For the avoidance of doubt, the parties to this Agreement may modify an Issuance Notice at any time provided they both agree in writing to any such modification.

(iii) Method of Offer and Sale. The Shares may be offered and sold (A) in negotiated transactions with the consent of the Company; (B) as block transactions; or (C) by any other method permitted by law deemed to be an “at the market offering” as defined in Rule 415(a)(4) under the Securities Act, sales made directly on the Principal Market or sales made into any other existing trading market of the Common Shares. Nothing in this Agreement shall be deemed to require either party to agree to the method of offer and sale specified in the preceding sentence, and (except as specified in clauses (A) and (B) above) the method of placement of any Shares by the Agent shall be at the Agent’s discretion.

(iv) Confirmation to the Company. If acting as sales agent hereunder, the Agent will provide written confirmation to the Company no later than the opening of the Trading Day next following the Trading Day on which it has placed Shares hereunder setting forth the number of Shares sold on such Trading Day, the corresponding Sales Price and the Issuance Price payable to the Company in respect thereof.

(v) Settlement. Each issuance of Shares will be settled on the applicable Settlement Date for such issuance of Shares and, subject to the provisions of Section 5, on or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Shares being sold by crediting the Agent or its designee’s account at The Depository Trust Company through its Deposit/Withdrawal At Custodian (DWAC) System, or by such other means of delivery as may be mutually agreed upon by the parties hereto and, upon receipt of such Shares, which in all cases shall be freely tradable, transferable, registered shares in good deliverable form, the Agent will deliver, by wire transfer of immediately available funds, the related Issuance Price in same day funds delivered to an account designated by the Company prior to the Settlement Date. The Company may sell Shares to the Agent as principal at a price agreed upon at each relevant time Shares are sold pursuant to this Agreement.

(vi) Suspension or Termination of Sales. Consistent with standard market settlement practices, the Company or the Agent may, upon notice to the other party hereto in

writing or by telephone (confirmed immediately by verifiable email), suspend any sale of Shares, and the period set forth in an Issuance Notice shall immediately terminate; *provided, however*, that (A) such suspension and termination shall not affect or impair either party's obligations with respect to any Shares placed or sold hereunder prior to the receipt of such notice; (B) if the Company suspends or terminates any sale of Shares after the Agent confirms such sale to the Company, the Company shall still be obligated to comply with Section 3(b)(v) with respect to such Shares; and (C) if the Company defaults in its obligation to deliver Shares on a Settlement Date, the Company agrees that it will hold the Agent harmless against any loss, claim, damage or expense (including, without limitation, penalties, interest and reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company. The parties hereto acknowledge and agree that, in performing its obligations under this Agreement, the Agent may borrow Common Shares from stock lenders in the event that the Company has not delivered Shares to settle sales as required by subsection (v) above, and may use the Shares to settle or close out such borrowings. The Company agrees that no such notice shall be effective against the Agent unless it is made to the persons identified in writing by the Agent in Schedule A hereto.

(vii) No Guarantee of Placement, Etc. The Company acknowledges and agrees that (A) there can be no assurance that the Agent will be successful in placing Shares; (B) the Agent will incur no liability or obligation to the Company or any other Person if it does not sell Shares; and (C) the Agent shall be under no obligation to purchase Shares on a principal basis pursuant to this Agreement, except as otherwise specifically agreed by the Agent and the Company.

(viii) Material Non-Public Information. Notwithstanding any other provision of this Agreement, the Company and the Agent agree that the Company shall not deliver any Issuance Notice to the Agent, and the Agent shall not be obligated to place any Shares, during any period in which the Company is in possession of material non-public information.

(c) Fees. As compensation for services rendered, the Company shall pay to the Agent, on the applicable Settlement Date, the Selling Commission for the applicable Issuance Amount (including with respect to any suspended or terminated sale pursuant to Section 3(b)(vi)) by the Agent deducting the Selling Commission from the applicable Issuance Amount. For the avoidance of doubt, the Company shall not be required to pay to the Agent any Selling Commission with respect to any Issuance Notice, except to the extent Shares are placed pursuant thereto.

(d) 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 Shares (including all printing and engraving costs); (ii) all fees and expenses of the registrar and transfer agent of the Shares; (iii) all necessary issue, transfer and other stamp taxes in connection with the issuance and sale of the Shares; (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 Prospectus, any Free Writing Prospectus (as defined below) prepared by or on behalf of, used by, or referred to by the Company, and all amendments and supplements thereto, and this Agreement; (vi) all filing fees, attorneys' fees and expenses

incurred by the Company or the Agent in connection with qualifying or registering (or obtaining exemptions from the qualification or registration of) all or any part of the Shares for offer and sale under the state securities or blue sky laws or the provincial securities laws of Canada, and, if requested by the Agent, preparing and printing a “Blue Sky Survey” or memorandum and a “Canadian wrapper” and any supplements thereto, advising the Agent of such qualifications, registrations, determinations and exemptions; (vii) the reasonable fees and disbursements of the Agent’s counsel, including the reasonable fees and expenses of counsel for the Agent in connection with, FINRA review, if any, and approval of the Agent’s participation in the offering and distribution of the Shares; (viii) the filing fees incident to FINRA review, if any; and (ix) the fees and expenses associated with listing the Shares on the Principal Market. The fees and disbursements of Agent’s counsel pursuant to subsections (vi) and (vii) of the preceding sentence shall not exceed (A) \$75,000 in connection with execution of this Agreement; (B) \$25,000 in connection with each Triggering Event Date (as defined below) involving the filing of a Form 10-K, on which the Company is required to provide a certificate pursuant to Section 4(g) and (C) \$15,000 in connection with each other Triggering Event Date (as defined below) on which the Company is required to provide a certificate pursuant to Section 4(g).

#### **Section 4. ADDITIONAL COVENANTS**

The Company covenants and agrees with the Agent as follows, in addition to any other covenants and agreements made elsewhere in this Agreement:

(a) Exchange Act Compliance. During the Agency Period, the Company shall (i) file, on a timely basis, with the Commission all reports and documents required to be filed under Section 13, 14 or 15 of the Exchange Act in the manner and within the time periods required by the Exchange Act (taking into account any extensions available under the Exchange Act); and (ii) either (A) include in its quarterly reports on Form 10-Q and its annual reports on Form 10-K, a summary detailing, for the relevant reporting period, (1) the number of Shares sold through the Agent pursuant to this Agreement and (2) the net proceeds received by the Company from such sales or (B) prepare a prospectus supplement containing, or include in such other filing permitted by the Securities Act or Exchange Act (each an “**Interim Prospectus Supplement**”), such summary information and, at least once a quarter and subject to this Section 4, file such Interim Prospectus Supplement pursuant to Rule 424(b) under the Securities Act (and within the time periods required by Rule 424(b) and Rule 430B under the Securities Act).

(b) Securities Act Compliance. After the date of this Agreement, the Company shall promptly advise the Agent in writing (i) of the receipt of any comments of, or requests for additional or supplemental information from, the Commission relating to the Registration Statement or the Prospectus; (ii) of the time and date of any filing of any post-effective amendment to the Registration Statement, any Rule 462(b) Registration Statement or any amendment or supplement to the Prospectus, any Free Writing Prospectus; (iii) of the time and date that any post-effective amendment to the Registration Statement or any Rule 462(b) Registration Statement becomes effective; and (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto, any Rule 462(b) Registration Statement or any amendment or supplement to the Prospectus or of any order preventing or suspending the use of any Free Writing Prospectus or the Prospectus, or of any proceedings to remove, suspend or terminate from listing or quotation the Common Shares from

any securities exchange upon which they are listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes. If the Commission shall enter any such stop order at any time, the Company will use its best efforts to obtain the lifting of such order as soon as reasonably practicable. Additionally, the Company agrees that it shall comply with the provisions of Rule 424(b) and Rule 433, as applicable, under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under such Rule 424(b) or Rule 433 were received in a timely manner by the Commission.

(c) Amendments and Supplements to the Prospectus and Other Securities Act Matters. If any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Prospectus so that the Prospectus does not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered to a purchaser, not misleading, or if in the opinion of the Agent or counsel for the Agent it is otherwise necessary to amend or supplement the Prospectus to comply with applicable law, including the Securities Act, the Company agrees (subject to Section 4(d) and 4(f)) to promptly prepare, file with the Commission and furnish at its own expense to the Agent, amendments or supplements to the Prospectus (including by filing a document incorporated by reference therein) so that the statements in the Prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered to a purchaser, not be misleading or so that the Prospectus, as amended or supplemented, will comply with applicable law including the Securities Act. Neither the Agent's consent to, or delivery of, any such amendment or supplement shall constitute a waiver of any of the Company's obligations under Sections 4(d) and 4(f).

(d) Agent's Review of Proposed Amendments and Supplements. Prior to amending or supplementing the Registration Statement (including any registration statement filed under Rule 462(b) under the Securities Act) or the Prospectus (excluding any amendment or supplement through incorporation of any report filed under the Exchange Act), the Company shall furnish to the Agent for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of each such proposed amendment or supplement, insofar as such proposed amendment or supplement relates to the offering of the Shares and the other transactions contemplated hereby, and the Company shall not file or use any such proposed amendment or supplement without the Agent's prior consent, and to file with the Commission within the applicable period specified in Rule 424(b) under the Securities Act any prospectus required to be filed pursuant to such Rule.

(e) Use of Free Writing Prospectus. Neither the Company nor the Agent has prepared, used, referred to or distributed, or will prepare, use, refer to or distribute, without the other party's prior written consent, any "written communication" that constitutes a "free writing prospectus" as such terms are defined in Rule 405 under the Securities Act with respect to the offering contemplated by this Agreement (any such free writing prospectus being referred to herein as a "**Free Writing Prospectus**").

(f) Free Writing Prospectuses. The Company shall furnish to the Agent for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of each

proposed free writing prospectus or any amendment or supplement thereto to be prepared by or on behalf of, used by, or referred to by the Company and the Company shall not file, use or refer to any proposed free writing prospectus or any amendment or supplement thereto without the Agent's consent, which shall not be unreasonably withheld, conditioned or delayed. The Company shall furnish to the Agent, without charge, as many copies of any free writing prospectus prepared by or on behalf of, or used by the Company, as the Agent may reasonably request. If at any time when a prospectus is required by the Securities Act (including, without limitation, pursuant to Rule 173(d)) to be delivered in connection with sales of the Shares (but in any event if at any time through and including the date of this Agreement) there occurred or occurs an event or development as a result of which any free writing prospectus prepared by or on behalf of, used by, or referred to by the Company conflicted or would conflict with the information contained in the Registration Statement or 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 prevailing at that subsequent time, not misleading, the Company shall promptly amend or supplement such free writing prospectus to eliminate or correct such conflict or so that the statements in such free writing prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at such subsequent time, not misleading, as the case may be; *provided, however*, that prior to amending or supplementing any such free writing prospectus, the Company shall furnish to the Agent for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of such proposed amended or supplemented free writing prospectus and the Company shall not file, use or refer to any such amended or supplemented free writing prospectus without the Agent's consent, which shall not be unreasonably withheld, conditioned or delayed.

(g) Filing of Agent Free Writing Prospectuses. The Company shall not take any action that would result in the Agent or the Company being required to file with the Commission pursuant to Rule 433(d) under the Securities Act a free writing prospectus prepared by or on behalf of the Agent that the Agent otherwise would not have been required to file thereunder.

(h) Copies of Registration Statement and Prospectus. After the date of this Agreement through the last time that a prospectus is required by the Securities Act (including, without limitation, pursuant to Rule 173(d)) to be delivered in connection with sales of the Shares, the Company agrees to furnish the Agent with copies (which may be electronic copies) of the Registration Statement and each amendment thereto, and with copies of the Prospectus and each amendment or supplement thereto in the form in which it is filed with the Commission pursuant to the Securities Act or Rule 424(b) under the Securities Act, both in such quantities as the Agent may reasonably request from time to time; and, if the delivery of a prospectus is required under the Securities Act or under the blue sky or securities laws of any jurisdiction at any time on or prior to the applicable Settlement Date for any period set forth in an Issuance Notice in connection with the offering or sale of the Shares and if at such time any event has occurred as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made when such Prospectus is delivered, not misleading, or, if for any other reason it is necessary during such same period to amend or supplement the Prospectus or to file under the Exchange Act any document incorporated by reference in the Prospectus in order to comply with the Securities Act or the Exchange Act, to

notify the Agent and to request that the Agent suspend offers to sell Shares (and, if so notified, the Agent shall cease such offers as soon as practicable); and if the Company decides to amend or supplement the Registration Statement or the Prospectus as then amended or supplemented, to advise the Agent promptly by telephone (with confirmation in writing) and to prepare and cause to be filed promptly with the Commission an amendment or supplement to the Registration Statement or the Prospectus as then amended or supplemented that will correct such statement or omission or effect such compliance, including by filing a document incorporated by reference therein; provided, however, that if during such same period the Agent is required to deliver a prospectus in respect of transactions in the Shares, the Company shall promptly prepare and file with the Commission such an amendment or supplement.

(i) Blue Sky Compliance. The Company shall cooperate with the Agent and counsel for the Agent to qualify or register the Shares for sale under (or obtain exemptions from the application of) the state securities or blue sky laws or Canadian provincial securities laws of those jurisdictions designated by the Agent, shall comply with such laws and shall continue such qualifications, registrations and exemptions in effect so long as required for the distribution of the Shares. The Company shall not be required to qualify as a foreign corporation or to take any action that would subject it to general service of process in any such jurisdiction where it is not presently qualified or where it would be subject to taxation as a foreign corporation. The Company will advise the Agent promptly of the suspension of the qualification or registration of (or any such exemption relating to) the Shares for offering, sale or trading in any jurisdiction or any initiation or threat of any proceeding for any such purpose, and in the event of the issuance of any order suspending such qualification, registration or exemption, the Company shall use its best efforts to obtain the withdrawal thereof as soon as reasonably practicable.

(j) Earnings Statement. The Company will make generally available to its security holders and the Agent as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement (which need not be audited) covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

(k) Listing; Reservation of Shares. During the Agency Period, the Company will (i) use its commercially reasonable efforts to cause the Shares to be listed on the Principal Market and to qualify the Shares for sale under the securities laws of such jurisdictions as the Agent reasonably designates and to continue such qualifications in effect so long as required for the sale of the Shares; provided, however, that the Company shall not be required in connection therewith to qualify as a foreign corporation or dealer in securities or file a general consent to service of process in any jurisdiction; and (ii) reserve and keep available at all times, free of preemptive rights, Shares for the purpose of enabling the Company to satisfy its obligations under this Agreement.

(l) Change of Circumstances. The Company will, at any time during a fiscal quarter in which the Company intends to tender an Issuance Notice or sell Shares, advise the Agent promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document provided to the Agent pursuant to this Agreement.

- (m) Transfer Agent. The Company shall engage and maintain, at its expense, a registrar and transfer agent for the Shares.
- (n) Use of Proceeds. The Company will use the net proceeds delivered against receipt of the Shares as described in the Prospectus in the section entitled "Use of Proceeds."
- (o) Due Diligence. During the term of this Agreement, the Company will reasonably cooperate with any reasonable due diligence review conducted by the Agent in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during normal business hours and at the Company's principal offices, as the Agent may reasonably request from time to time.
- (p) Representations and Warranties. The Company acknowledges that each delivery of an Issuance Notice and each delivery of Shares on a Settlement Date shall be deemed to be (i) an affirmation to the Agent that the representations and warranties of the Company contained in or made pursuant to this Agreement are true and correct as of the date of such Issuance Notice or of such Settlement Date, as the case may be, as though made at and as of each such date, except as may be disclosed in the Prospectus (including any documents incorporated by reference therein and any supplements thereto); and (ii) an undertaking that the Company will advise the Agent if any of such representations and warranties will not be true and correct as of the Settlement Date for the Shares relating to such Issuance Notice, as though made at and as of each such date (except that such representations and warranties shall be deemed to relate to the Registration Statement and the Prospectus as amended and supplemented relating to such Shares).
- (q) Deliverables at Triggering Event Dates; Certificates. The Company agrees that on or prior to the date of the first Issuance Notice and, during the term of this Agreement after the date of the first Issuance Notice, upon:
- (A) the filing of the Prospectus or the amendment or supplement of any Registration Statement or Prospectus (other than a prospectus supplement relating solely to an offering of securities other than the Shares or a prospectus filed pursuant to Section 4(a)(ii)(b)), by means of a post-effective amendment, sticker or supplement, but not by means of incorporation of documents by reference into the Registration Statement or Prospectus;
- (B) the filing with the Commission of an annual report on Form 10-K or a quarterly report on Form 10-Q (including any Form 10-K/A or Form 10-Q/A containing amended financial information or a material amendment to the previously filed annual report on Form 10-K or quarterly report on Form 10-Q), in each case, of the Company; or
- (C) the filing with the Commission of a current report on Form 8-K of the Company containing amended financial information (other than information "furnished" pursuant to Item 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) that is material to the offering of securities of the Company in the Agent's reasonable discretion; (any such event, a "**Triggering Event Date**"), the Company shall furnish the Agent (but in the case of clause (C) above only if the Agent reasonably determines that the information contained in such current report on Form 8-K of the

Company is material) with a certificate as of the Triggering Event Date, in the form and substance satisfactory to the Agent and its counsel, substantially similar to the form previously provided to the Agent and its counsel, modified, as necessary, to relate to the Registration Statement and the Prospectus as amended or supplemented, (A) confirming that the representations and warranties of the Company contained in this Agreement are true and correct on the date of such certificate as if made on such date, (B) confirming that the Company has performed all of its obligations hereunder to be performed on or prior to the date of such certificate and as to the matters set forth in Section 5(a)(iii), hereof, and (C) containing any other certification that the Agent shall reasonably request. The requirement to provide a certificate under this Section 4(q) shall be waived for any Triggering Event Date occurring at a time when no Issuance Notice is pending or a suspension is in effect, which waiver shall continue until the date the Company delivers instructions for the sale of Shares hereunder (which for such calendar quarter shall be considered a Triggering Event Date). Notwithstanding the foregoing, if the Company subsequently decides to sell Shares following a Triggering Event Date when a suspension was in effect and did not provide the Agent with a certificate under this Section 4(q), then before the Company delivers the instructions for the sale of Shares or the Agent sells any Shares pursuant to such instructions, the Company shall provide the Agent with a certificate in conformity with this Section 4(q) dated as of the date that the instructions for the sale of Shares are issued.

(r) Legal Opinions. On or prior to the date of the first Issuance Notice and on or prior to each Triggering Event Date (excluding the date of this Agreement) with respect to which the Company is obligated to deliver a certificate pursuant to Section 4(q) for which no waiver is applicable, a negative assurance letter and the written legal opinion of Gibson, Dunn & Crutcher LLP, counsel to the Company and Foley Hoag LLP, special patent counsel to the Company, each dated the date of delivery, shall be delivered to the Agent, each in form and substance reasonably satisfactory to Agent and its counsel, substantially similar to the form previously provided to the Agent and its counsel, modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented. In lieu of such opinions for subsequent periodic filings, in the discretion of the Agent, the Company may furnish a reliance letter from such counsel to the Agent, permitting the Agent to rely on a previously delivered opinion letter, modified as appropriate for any passage of time or Triggering Event Date (except that statements in such prior opinion shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of such Triggering Event Date).

(s) Comfort Letters. On or prior to the date of the first Issuance Notice and on or prior to each Triggering Event Date (excluding the date of this Agreement) with respect to which the Company is obligated to deliver a certificate pursuant to Section 4(q) for which no waiver is applicable, the Company shall cause the Accountants, the independent registered public accounting firm who has audited the financial statements included or incorporated by reference in the Registration Statement, to furnish the Agent a comfort letter, dated the date of delivery, in form and substance reasonably satisfactory to the Agent and its counsel, substantially similar to the form previously provided to the Agent and its counsel; provided, however, that any such comfort letter will only be required on the Triggering Event Date specified to the extent that it contains financial statements filed with the Commission under the Exchange Act and incorporated or deemed to be incorporated by reference into a Prospectus. If requested by the Agent, the Company shall also cause a comfort letter to be furnished to the Agent in connection with any occurrence of any material transaction or event requiring the filing of a current report on Form 8-K containing

material amended financial information of the Company, including the restatement of the Company's financial statements. The Company shall be required to furnish no more than one comfort letter from the Accountants hereunder per each filing of an annual report on Form 10-K or a quarterly report on Form 10-Q.

(t) Secretary's Certificate. On or prior to the date of the first Issuance Notice and on or prior to each Triggering Event Date (excluding the date of this Agreement) with respect to which the Company is obligated to deliver a certificate pursuant to Section 4(q) for which no waiver is applicable, the Company shall furnish the Agent a certificate executed by the Secretary of the Company, signing in such capacity, dated the date of delivery (i) certifying that attached thereto are true and complete copies of the resolutions duly adopted by the Board of Directors of the Company authorizing the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby (including, without limitation, the issuance of the Shares pursuant to this Agreement), which authorization shall be in full force and effect on and as of the date of such certificate, (ii) certifying and attesting to the office, incumbency, due authority and specimen signatures of each Person who executed this Agreement for or on behalf of the Company, and (iii) containing any other certification that the Agent shall reasonably request.

(u) Agent's Own Account; Clients' Account. The Company consents to the Agent trading, in compliance with applicable law, in the Common Shares for the Agent's own account and for the account of its clients at the same time as sales of the Shares occur pursuant to this Agreement.

(v) Investment Limitation. The Company shall not invest, or otherwise use the proceeds received by the Company from its sale of the Shares in such a manner as would require the Company or any of its subsidiaries to register as an investment company under the Investment Company Act.

(w) Market Activities. The Company will not take, directly or indirectly, any action designed to or that might be reasonably expected to cause or result in stabilization or manipulation of the price of the Shares or any other reference security, whether to facilitate the sale or resale of the Shares or otherwise, and the Company will, and shall cause each of its affiliates to, comply with all applicable provisions of Regulation M. If the limitations of Rule 102 of Regulation M ("Rule 102") do not apply with respect to the Shares or any other reference security pursuant to any exception set forth in Section (d) of Rule 102, then promptly upon notice from the Agent (or, if later, at the time stated in the notice), the Company will, and shall cause each of its affiliates to, comply with Rule 102 as though such exception were not available but the other provisions of Rule 102 (as interpreted by the Commission) did apply.

(x) Notice of Other Sale. Without the written consent of the Agent, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Shares or securities convertible into or exchangeable for Common Shares (other than Shares hereunder), warrants or any rights to purchase or acquire Common Shares, or effect a reverse stock split, recapitalization, share consolidation, reclassification or similar transaction affecting the outstanding Common Shares, during the period beginning on the third Trading Day immediately prior to the date on which any Issuance Notice is delivered to the Agent hereunder and ending on the earlier of the third Trading Day immediately following:  
(A) the

Settlement Date with respect to Shares sold pursuant to such Issuance Notice, and (B) the date an Issuance Notice is cancelled if no Shares have been sold pursuant to such Issuance Notice; and will not directly or indirectly enter into any other “at the market” or continuous equity transaction to offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Shares (other than the Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Shares, warrants or any rights to purchase or acquire, Common Shares prior to the termination of this Agreement; provided, however, that such restrictions will not be required in connection with the Company’s (i) issuance, grant or sale of Common Shares, options to purchase Common Shares or Common Shares issuable upon the exercise of options, settlement of restricted stock units or other equity awards pursuant to any employee or director share option, incentive or benefit plan, share purchase or ownership plan, long-term incentive plan, dividend reinvestment plan, inducement award under Nasdaq rules or other compensation plan of the Company or its subsidiaries, as in effect on the date of this Agreement, (ii) issuance or sale of Common Shares issuable upon exchange, conversion or redemption of securities or the exercise or vesting of warrants, options or other equity awards outstanding as of the date hereof or subsequently disclosed in filings by the Company available on EDGAR or otherwise in writing to the Agent, (iii) issuance or sale of Common Shares or securities convertible into or exchangeable for Common Shares as consideration for mergers, acquisitions, other business combinations, joint ventures or strategic alliances occurring after the date of this Agreement which are not used for capital raising purposes, provided that the aggregate number of Common Shares issued or sold under this subsection (iii) shall not exceed 5% of the number of Common Shares outstanding immediately prior to giving effect to such sale of issuance, and (iv) modification of any outstanding options, warrants or any rights to purchase or acquire Common Shares.

## **Section 5. CONDITIONS TO DELIVERY OF ISSUANCE NOTICES AND TO SETTLEMENT**

(a) Conditions Precedent to the Right of the Company to Deliver an Issuance Notice and the Obligation of the Agent to Sell Shares. The right of the Company to deliver an Issuance Notice hereunder is subject to the satisfaction, on the date of delivery of such Issuance Notice, and the obligation of the Agent to use its commercially reasonable efforts to place Shares during the applicable period set forth in the Issuance Notice is subject to the satisfaction, on each Trading Day during the applicable period set forth in the Issuance Notice, of each of the following conditions:

(i) Accuracy of the Company’s Representations and Warranties; Performance by the Company. The Company shall have delivered the certificate required to be delivered pursuant to Section 4(q) on or before the date on which delivery of such certificate is required pursuant to Section 4(q). The Company shall have performed, satisfied and complied with all covenants, agreements and conditions required by this Agreement to be performed, satisfied or complied with by the Company at or prior to such date, including, but not limited to, the covenants contained in Section 4(r), Section 4(s) and Section 4(t).

(ii) No Injunction. No statute, rule, regulation, executive order, decree, ruling or injunction shall have been enacted, entered, promulgated or endorsed by any court or governmental authority of competent jurisdiction or any self-regulatory organization having authority over the matters contemplated hereby that prohibits or directly and materially adversely

affects any of the transactions contemplated by this Agreement, and no proceeding shall have been commenced that may have the effect of prohibiting or materially adversely affecting any of the transactions contemplated by this Agreement.

(iii) Material Adverse Changes. Except as disclosed in the Prospectus and the Time of Sale Information, (a) in the judgment of the Agent there shall not have occurred any Material Adverse Change; and (b) there shall not have occurred any downgrading, nor shall any notice have been given of any intended or potential downgrading or of any review for a possible change that does not indicate the direction of the possible change, in the rating accorded any securities of the Company or any of its subsidiaries by any “nationally recognized statistical rating organization” as such term is defined for purposes of Section 3(a)(62) of the Exchange Act.

(iv) No Suspension of Trading in or Delisting of Common Shares; Other Events. The trading of the Common Shares (including without limitation the Shares) shall not have been suspended by the Commission, the Principal Market or FINRA and the Common Shares (including without limitation the Shares) shall have been approved for listing or quotation on and shall not have been delisted from the Nasdaq Stock Market, the New York Stock Exchange or any of their constituent markets. There shall not have occurred (and be continuing in the case of occurrences under clauses (i) and (ii) below) any of the following: (i) trading or quotation in any of the Company’s securities shall have been suspended or limited by the Commission or by the Principal Market or trading in securities generally on either the Principal Market shall have been suspended or limited, or minimum or maximum prices shall have been generally established on any of such stock exchanges by the Commission or the FINRA; (ii) a general banking moratorium shall have been declared by any of federal or New York, authorities; or (iii) there shall have occurred any outbreak or escalation of national or international hostilities or any crisis or calamity, or any change in the United States or international financial markets, or any substantial change or development involving a prospective substantial change in United States’ or international political, financial or economic conditions, as in the judgment of the Agent is material and adverse and makes it impracticable to market the Shares in the manner and on the terms described in the Prospectus or to enforce contracts for the sale of securities.

(b) Documents Required to be Delivered on each Issuance Notice Date. The Agent’s obligation to use its commercially reasonable efforts to place Shares hereunder shall additionally be conditioned upon the delivery to the Agent on or before the Issuance Notice Date of a certificate in form and substance reasonably satisfactory to the Agent, executed by the Chief Executive Officer, President or Chief Financial Officer of the Company, to the effect that all conditions to the delivery of such Issuance Notice shall have been satisfied as at the date of such certificate (which certificate shall not be required if the foregoing representations shall be set forth in the Issuance Notice).

(c) No Misstatement or Material Omission. The Agent shall not have advised the Company that the Registration Statement, the Prospectus or the Time of Sale Information, or any amendment or supplement thereto, contains an untrue statement of fact that in the Agent’s reasonable opinion is material, or omits to state a fact that in the Agent’s reasonable opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(d) Agent Counsel Legal Opinion. Agent shall have received from Cooley LLP, counsel for Agent, such opinion or opinions, on or before the date on which the delivery of the Company counsel legal opinion is required pursuant to Section 4(r), with respect to such matters as Agent 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.

## **Section 6. INDEMNIFICATION AND CONTRIBUTION**

(a) Indemnification of the Agent. The Company agrees to indemnify and hold harmless the Agent, its officers and employees, and each person, if any, who controls the Agent within the meaning of the Securities Act or the Exchange Act against any loss, claim, damage, liability or expense, as incurred, to which the Agent or such officer, employee or controlling person may become subject, under the Securities Act, the Exchange Act, other federal or state statutory law or regulation, or the laws or regulations of foreign jurisdictions where Shares have been offered or sold or at common law or otherwise (including in settlement of any litigation), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, including any information deemed to be a part thereof pursuant to Rule 430B under the Securities Act, or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) any untrue statement or alleged untrue statement of a material fact contained in any Free Writing Prospectus that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433(d) of the Securities Act or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, and to reimburse the Agent and each such officer, employee and controlling person for any and all documented expenses (including the reasonable and documented fees and disbursements of counsel chosen by the Agent) as such expenses are reasonably incurred by the Agent or such officer, employee or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action; provided, however, that the foregoing indemnity agreement shall not apply to any loss, claim, damage, liability or expense to the extent, but only to the extent, arising out of or based upon any untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with written information furnished to the Company by the Agent expressly for use in the Registration Statement, any such Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), it being understood and agreed that the only such information furnished by the Agent to the Company consists of the information described in subsection (b) below. The indemnity agreement set forth in this Section 6(a) shall be in addition to any liabilities that the Company may otherwise have.

(b) Indemnification of the Company and Company Officers and Directors. The Agent agrees to indemnify and hold harmless the Company, each of its directors, each of its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of the Securities Act or the Exchange Act against any loss, claim, damage, liability or expense, as incurred, to which the Company or any such director, officer or controlling person may become subject, under the Securities Act, the Exchange Act, other federal or state statutory law or regulation, or the laws or regulations of foreign jurisdictions where Shares have been offered

or sold or at common law or otherwise (including in settlement of any litigation), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, including any information deemed to be a part thereof pursuant to Rule 430B under the Securities Act, or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) any untrue statement or alleged untrue statement of a material fact contained in any Free Writing Prospectus that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433(d) of the Securities Act or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; but, for each of (i) and (ii) above, only to the extent arising out of or based upon any untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with written information furnished to the Company by the Agent expressly for use in the Registration Statement, any such Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), it being understood and agreed that the only such information furnished by the Agent to the Company consists of the information set forth in the first sentence of the ninth paragraph under the caption "Plan of Distribution" in the Prospectus and the tenth paragraph under the caption "Plan of Distribution" in the Prospectus, and to reimburse the Company and each such director, officer and controlling person for any and all documented expenses (including the reasonable and documented fees and disbursements of counsel chosen by the Company) as such expenses are reasonably incurred by the Company or such officer, director or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. The indemnity agreement set forth in this Section 6(b) shall be in addition to any liabilities that the Agent or the Company may otherwise have.

(c) Notifications and Other Indemnification Procedures. Promptly after receipt by an indemnified party under this Section 6 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against an indemnifying party under this Section 6, notify the indemnifying party in writing of the commencement thereof, but the omission so to notify the indemnifying party will not relieve it from any liability which it may have to any indemnified party for contribution or otherwise than under the indemnity agreement contained in this Section 6 or to the extent it is not materially prejudiced as a proximate result of such failure. In case any such action is brought against any indemnified party and such indemnified party seeks or intends to seek indemnity from an indemnifying party, the indemnifying party will be entitled to participate in, and, to the extent that it shall elect, jointly with all other indemnifying parties similarly notified, by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party; provided, however, if the defendants in any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that a conflict may arise between the positions of the indemnifying party and the indemnified party in conducting the defense of any such action or that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, the indemnified party or parties shall have the right to select separate counsel to assume such legal defenses and to otherwise participate in the defense of such action on behalf of such indemnified party or parties. Upon

receipt of notice from the indemnifying party to such indemnified party of such indemnifying party's election so to assume the defense of such action and approval by the indemnified party of counsel, the indemnifying party will not be liable to such indemnified party under this Section 6 for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof unless (i) the indemnified party shall have employed separate counsel in accordance with the proviso to the preceding sentence (it being understood, however, that the indemnifying party shall not be liable for the fees and expenses of more than one separate counsel (together with local counsel), representing the indemnified parties who are parties to such action), which counsel (together with any local counsel) for the indemnified parties shall be selected in writing by the indemnified party (in the case of counsel for the indemnified parties referred to in Section 6(a) or Section 6(b) above), (ii) the indemnifying party shall not have employed counsel reasonably satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of commencement of the action or (iii) the indemnifying party has authorized in writing the employment of counsel for the indemnified party at the expense of the indemnifying party, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying party and shall be paid as they are incurred.

(d) Settlements. The indemnifying party under this Section 6 shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party against any loss, claim, damage, liability or expense by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel as contemplated by Section 6(b) hereof, the indemnifying party agrees that it shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 60 days after receipt by such indemnifying party of the aforesaid request; and (ii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is or could have been a party and indemnity was or could have been sought hereunder by such indemnified party, unless such settlement, compromise or consent includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such action, suit or proceeding.

(e) Contribution. If the indemnification provided for in this Section 6 is for any reason held to be unavailable to or otherwise insufficient to hold harmless an indemnified party in respect of any losses, claims, damages, liabilities or expenses referred to therein, then each indemnifying party shall contribute to the aggregate amount paid or payable by such indemnified party, as incurred, as a result of any losses, claims, damages, liabilities or expenses referred to therein (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the Agent, on the other hand, from the offering of the Shares pursuant to this Agreement; or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Agent, on the other hand, in connection with the statements or omissions which resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The relative

benefits received by the Company, on the one hand, and the Agent, on the other hand, in connection with the offering of the Shares pursuant to this Agreement shall be deemed to be in the same respective proportions as the total gross proceeds from the offering of the Shares (before deducting expenses) received by the Company bear to the total commissions received by the Agent. The relative fault of the Company, on the one hand, and the Agent, on the other hand, shall be determined by reference to, among other things, whether any such untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company, on the one hand, or the Agent, on the other hand, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include, subject to the limitations set forth in Section 6(c), any reasonable and documented legal or other fees or expenses reasonably incurred by such party in connection with investigating or defending any action or claim. The provisions set forth in Section 6(c) with respect to notice of commencement of any action shall apply if a claim for contribution is to be made under this Section 6(e); *provided, however*, that no additional notice shall be required with respect to any action for which notice has been given under Section 6(c) for purposes of indemnification.

The Company and the Agent agree that it would not be just and equitable if contribution pursuant to this Section 6(e) were determined by pro rata allocation or by any other method of allocation which does not take account of the equitable considerations referred to in this Section 6(e).

Notwithstanding the provisions of this Section 6(e), the Agent shall not be required to contribute any amount in excess of the agent fees received by the Agent in connection with the offering contemplated hereby. 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. For purposes of this Section 6(e), each officer and employee of the Agent and each person, if any, who controls the Agent within the meaning of the Securities Act or the Exchange Act shall have the same rights to contribution as the Agent, and each director of the Company, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company with the meaning of the Securities Act and the Exchange Act shall have the same rights to contribution as the Company.

## **Section 7. TERMINATION & SURVIVAL**

(a) Term. Subject to the provisions of this Section 7, the term of this Agreement shall continue from the date of this Agreement until the end of the Agency Period, unless earlier terminated by the parties to this Agreement pursuant to this Section 7.

(b) Termination; Survival Following Termination.

(i) Either party may terminate this Agreement prior to the end of the Agency Period, by giving written notice as required by this Agreement, upon ten (10) Trading Days' notice to the other party; provided that, (A) if the Company terminates this Agreement after the Agent

confirms to the Company any sale of Shares, the Company shall remain obligated to comply with Section 3(b)(v) with respect to such Shares and (B) Section 2, Section 6, Section 7 and Section 8 shall survive termination of this Agreement. If termination shall occur prior to the Settlement Date for any sale of Shares, such sale shall nevertheless settle in accordance with the terms of this Agreement.

(ii) In addition to the survival provision of Section 7(b)(i), the respective indemnities, agreements, representations, warranties and other statements of the Company, of its officers and of the Agent set forth in or made pursuant to this Agreement will remain in full force and effect, regardless of any investigation made by or on behalf of the Agent or the Company or any of its or their partners, officers or directors or any controlling person, as the case may be, and, anything herein to the contrary notwithstanding, will survive delivery of and payment for the Shares sold hereunder and any termination of this Agreement.

#### **Section 8. MISCELLANEOUS**

(a) Press Releases and Disclosure. The Company may issue a press release describing the material terms of the transactions contemplated hereby as soon as practicable following the date of this Agreement, and may file with the Commission a Current Report on Form 8-K, with this Agreement attached as an exhibit thereto, describing the material terms of the transactions contemplated hereby, and the Company shall consult with the Agent prior to making such disclosures, and the parties hereto shall use all commercially reasonable efforts, acting in good faith, to agree upon a text for such disclosures that is reasonably satisfactory to all parties hereto. No party hereto shall issue thereafter any press release or like public statement (including, without limitation, any disclosure required in reports filed with the Commission pursuant to the Exchange Act) related to this Agreement or any of the transactions contemplated hereby without the prior written approval of the other party hereto, except as may be necessary or appropriate in the reasonable opinion of the party seeking to make disclosure to comply with the requirements of applicable law or stock exchange rules. If any such press release or like public statement is so required, the party making such disclosure shall consult with the other party prior to making such disclosure, and the parties shall use all commercially reasonable efforts, acting in good faith, to agree upon a text for such disclosure that is reasonably satisfactory to all parties hereto.

(b) No Advisory or Fiduciary Relationship. The Company acknowledges and agrees that (i) the transactions contemplated by this Agreement, including the determination of any fees, are arm's-length commercial transactions between the Company and the Agent, (ii) when acting as a principal under this Agreement, the Agent is and has been acting solely as a principal and is not the agent or fiduciary of the Company, or its stockholders, creditors, employees or any other party, (iii) the Agent has not assumed nor will assume an advisory or fiduciary responsibility in favor of the Company with respect to the transactions contemplated hereby or the process leading thereto (irrespective of whether the Agent has advised or is currently advising the Company on other matters) and the Agent does not have any obligation to the Company with respect to the transactions contemplated hereby except the obligations expressly set forth in this Agreement, (iv) the Agent and its respective affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Company, and (v) the Agent has not provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated hereby and the Company has consulted its own legal, accounting, regulatory and tax advisors to the extent it deemed appropriate.

(c) Research Analyst Independence. The Company acknowledges that the Agent's research analysts and research departments are required to and should be independent from their respective investment banking divisions and are subject to certain regulations and internal policies, and as such the Agent's research analysts may hold views and make statements or investment recommendations and/or publish research reports with respect to the Company or the offering that differ from the views of their respective investment banking divisions. The Company understands that the Agent is a full service securities firm and as such from time to time, subject to applicable securities laws, may effect transactions for its own account or the account of its customers and hold long or short positions in debt or equity securities of the companies that may be the subject of the transactions contemplated by this Agreement.

(d) Notices. All communications hereunder shall be in writing and shall be mailed, hand delivered, sent via electronic mail (if applicable) or telecopied and confirmed to the parties hereto as follows:

If to the Agent:

Jefferies LLC  
520 Madison Avenue  
New York, NY 10022  
Facsimile: (646) 786-5719  
Attention: General Counsel

with a copy (which shall not constitute notice) to:

Cooley LLP  
55 Hudson Yards  
New York, NY 10001  
Attention: Daniel I. Goldberg, Esq.  
Email: dgoldberg@cooley.com

If to the Company:

CTI BioPharma Corp.,  
3101 Western Avenue, Suite 800  
Seattle, WA 98121  
Attention: Chief Financial Officer

with a copy (which shall not constitute notice) to:

Gibson, Dunn & Crutcher LLP  
555 Mission Street  
San Francisco, CA 94105-0921  
Attention: Ryan A. Murr and Branden C. Berns  
Email: rmurr@gibsondunn.com and bberns@gibsondunn.com

Any party hereto may change the address for receipt of communications by giving written notice to the others in accordance with this Section 8(d).

(e) Successors. This Agreement will inure to the benefit of and be binding upon the parties hereto, and to the benefit of the employees, officers and directors and controlling persons referred to in Section 6, and in each case their respective successors, and no other person will have any right or obligation hereunder. The term “**successors**” shall not include any purchaser of the Shares as such from the Agent merely by reason of such purchase.

(f) Partial Unenforceability. The invalidity or unenforceability of any Article, Section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other Article, Section, paragraph or provision hereof. If any Article, Section, paragraph 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.

(g) Governing Law Provisions. This Agreement shall be governed by and construed in accordance with the internal laws of the State of New York applicable to agreements made and to be performed in such state. Any legal suit, action or proceeding arising out of or based upon this Agreement or the transactions contemplated hereby may be instituted in the federal courts of the United States of America located in the Borough of Manhattan in the City of New York or the courts of the State of New York in each case located in the Borough of Manhattan in the City of New York (collectively, the “**Specified Courts**”), and each party irrevocably submits to the exclusive jurisdiction (except for proceedings instituted in regard to the enforcement of a judgment of any such court, as to which such jurisdiction is non-exclusive) of such courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail to such party’s address set forth above shall be effective service of process for any suit, action or other proceeding brought in any such court. The parties irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the Specified Courts and irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such suit, action or other proceeding brought in any such court has been brought in an inconvenient forum.

(h) General Provisions. 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. This Agreement may be executed in two or more counterparts, each one of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument, and may be delivered by facsimile transmission or by electronic delivery of a portable document format (PDF) file (including any electronic signature covered by the U.S. federal ESIGN Act of 2000, Uniform Electronic Transactions Act, the Electronic Signatures and Records Act or other applicable law, e.g., [www.docusign.com](http://www.docusign.com)). This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The Article and Section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement.



If the foregoing is in accordance with your understanding of our agreement, kindly sign and return to the Company the enclosed copies hereof, whereupon this instrument, along with all counterparts hereof, shall become a binding agreement in accordance with its terms.

Very truly yours,

**CTI BIOPHARMA CORP.**

By: /s/ David Kirske  
Name: David Kirske  
Title: Chief Financial Officer

The foregoing Agreement is hereby confirmed and accepted by the Agent in New York, New York as of the date first above written.

**JEFFERIES LLC**

By: /s/ Donald Lynaugh  
Name: Donald Lynaugh  
Title: Managing Director

*[Signature Page to Sale Agreement]*

**EXHIBIT A**

**ISSUANCE NOTICE**

[Date]

Jefferies LLC  
520 Madison Avenue  
New York, New York 10022

Attn: [\_\_\_\_\_]

Reference is made to the Open Market Sale Agreement between CTI BioPharma Corp. (the “**Company**”) and Jefferies LLC (the “**Agent**”) dated as of August 16, 2022. The Company confirms that all conditions to the delivery of this Issuance Notice are satisfied as of the date hereof.

Date of Delivery of Issuance Notice (determined pursuant to Section 3(b)(i)):

\_\_\_\_\_

Issuance Amount (equal to the total Sales Price for such Shares):

Number of days in selling period

\$ \_\_\_\_\_

First date of selling period:

\_\_\_\_\_

Last date of selling period:

\_\_\_\_\_

Settlement Date(s) if other than standard T+2 settlement:

\_\_\_\_\_

Floor Price Limitation: \$\_\_\_\_ per share

Comments: \_\_\_\_\_

**CTI BIOPHARMA CORP.**

By: \_\_\_\_\_

Name:

Title:

---

**Schedule A**

**Notice Parties**

The Company

Adam Craig, President and Chief Executive Officer [\*\*\*\*\*]

David Kirske, Chief Financial Officer [\*\*\*\*\*]

The Agent

Michael Magarro (mmagarro@jefferies.com)

Donald Lynaugh (dlynaugh@jefferies.com)

Jack Fabbri (jfabbr@jefferies.com)

August 16, 2022

CTI BioPharma Corp.  
3101 Western Avenue, Suite 800  
Seattle, Washington 98121

Re: CTI BioPharma Corp.  
Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to CTI BioPharma Corp., a Delaware corporation (the "Company"), in connection with the preparation and filing with the Securities and Exchange Commission (the "Commission") of a Registration Statement on Form S-3 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration under the Securities Act and the proposed issuance and sale from time to time pursuant to Rule 415 under the Securities Act, together or separately and in one or more series (if applicable) of:

- (i) the Company's debt securities, which may be either secured or unsecured and will either be senior debt securities ("Senior Debt Securities") or subordinated debt securities (the "Subordinated Debt Securities") and, collectively with the Senior Debt Securities, the "Debt Securities");
- (ii) shares of the Company's common stock, par value \$0.001 per share (the "Common Stock");
- (iii) shares of the Company's preferred stock, par value \$0.001 per share (the "Preferred Stock");
- (iv) warrants for the purchase of Common Stock, Preferred Stock and/or Debt Securities (the "Warrants");
- (v) rights for the purchase of Common Stock, Preferred Stock and/or Debt Securities (the "Rights"); and
- (vi) units of the Company comprised of any combination of Common Stock, Preferred Stock, Debt Securities, Warrants or Rights (the "Units").

The Debt Securities, Common Stock, Rights, Preferred Stock, Warrants and Units are collectively referred to herein as the “Securities.” The Senior Debt Securities are to be issued under an indenture to be entered into between the Company and a financial institution to be named at the time such indenture is executed (the “Trust Company”), as indenture trustee (the “Senior Base Indenture”). The Subordinated Debt Securities are to be issued under an indenture to be entered into between the Company and Trust Company, as indenture trustee (the “Subordinated Base Indenture” and together with the Senior Base Indenture, the “Base Indentures”).

In arriving at the opinions expressed below, we have examined originals, or copies certified or otherwise identified to our satisfaction as being true and complete copies of the originals, of forms of the Base Indentures, specimen Common Stock certificates, and such other documents, corporate records, certificates of officers of the Company and of public officials and other instruments as we have deemed necessary or advisable to enable us to render these opinions. In our examination, we have assumed the genuineness of all signatures, the legal capacity and competency of all natural persons, the authenticity of all documents submitted to us as originals and the conformity to original documents of all documents submitted to us as copies. As to any facts material to these opinions, we have relied to the extent we deemed appropriate and without independent investigation upon statements and representations of officers and other representatives of the Company and others.

We have assumed without independent investigation that:

(i) at the time any Securities are sold pursuant to the Registration Statement (the “Relevant Time”), the Registration Statement and any supplements and amendments thereto (including post-effective amendments) will be effective and will comply with all applicable laws;

(ii) at the Relevant Time, a prospectus supplement will have been prepared and filed with the Commission describing the Securities offered thereby and all related documentation and will comply with all applicable laws;

(iii) all Securities will be issued and sold in the manner stated in the Registration Statement and the applicable prospectus supplement;

(iv) at the Relevant Time, all corporate or other action required to be taken by the Company to duly authorize each proposed issuance of Securities and any related documentation (including (i) the due reservation of any shares of Common Stock or Preferred Stock for issuance upon exercise, conversion or exchange of any Securities for Common Stock or Preferred Stock (a “Convertible Security”), and (ii) the execution (in the case of certificated Securities), delivery and performance of the Securities and any related documentation referred to in paragraphs 1 through 5 below) shall have been duly completed and shall remain in full force and effect;

(v) upon issuance of any Common Stock or Preferred Stock, including upon exercise, conversion or exchange of any Convertible Security, the total number of shares of Common Stock or Preferred Stock issued and outstanding will not exceed the total number of shares of Common Stock or Preferred Stock, as applicable, that the Company is then authorized to issue under its certificate of incorporation and other relevant documents;

(vi) in the case of Debt Securities, at the Relevant Time, the relevant trustee shall have been qualified under the Trust Indenture Act of 1939, as amended (the “TIA”), a Statement of Eligibility of the Trustee on Form T-1 shall have been properly filed with the Commission and the relevant Base Indenture shall have been duly executed and delivered by the Company and all other parties thereto and duly qualified under the TIA;

(vii) at the Relevant Time, a definitive purchase, underwriting or similar agreement and any other necessary agreement with respect to any Securities offered or issued will have been duly authorized by all necessary corporate or other action of the Company and duly executed and delivered by the Company and the other parties thereto.

Based on the foregoing and in reliance thereon, and subject to the assumptions, exceptions, qualifications and limitations set forth herein, we are of the opinion that:

1. With respect to any Debt Securities, when:
  - a. the terms and conditions of such Debt Securities have been duly established by supplemental indenture or officers’ certificate in accordance with the terms and conditions of the relevant Base Indenture,
  - b. any such supplemental indenture has been duly executed and delivered by the Company and the relevant trustee (together with the relevant Base Indenture, the “Indenture”), and
  - c. such Debt Securities have been executed (in the case of certificated Debt Securities), delivered and authenticated in accordance with the terms of the applicable Indenture and issued and sold for the consideration set forth in the applicable definitive purchase, underwriting or similar agreement, such Debt Securities will be legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their respective terms.
2. With respect to any shares of Preferred Stock, when:
  - a. the certificate of designations relating to such Preferred Stock has been duly executed and filed with the Office of the Secretary of State of the State of Delaware,
  - b. such shares have been issued either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement and for the consideration therefor provided for therein or (ii) upon exercise, conversion or exchange of any Convertible Security and for any additional consideration specified in such Convertible Security or the instrument governing such Convertible Security providing for such conversion or exercise, which consideration (including any consideration paid for such Convertible Security), on a per-share basis, shall in either event not be less than the par value of the Preferred Stock, and

- c. any such Convertible Security was previously validly issued and is fully paid and non-assessable (in the case of an equity Security) or is a legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, such shares of Preferred Stock will be validly issued, fully paid and non-assessable.
3. With respect to shares of Common Stock and the associated Rights, when:
  - a. such shares of Common Stock and the associated Rights have been duly executed (in the case of certificated shares or Rights) and delivered either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement for the consideration provided for therein, or (ii) upon conversion or exercise of any Convertible Security, in accordance with the terms of such Convertible Security or the instrument governing such Convertible Security providing for such conversion or exercise, and for any additional consideration specified therein, which consideration (including any consideration paid for such Convertible Security), on a per-share basis, shall in either event not be less than the par value of the Common Stock, and
  - b. any such Convertible Security was previously validly issued and is fully paid and non-assessable (in the case of an equity Security) or is a legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, such shares of Common Stock will be validly issued, fully paid and non-assessable and such Rights will be validly issued.
4. With respect to any Warrants, when:
  - a. the warrant agreement relating to such Warrants (the "Warrant Agreement"), if any, has been duly executed and delivered by the Company and each other party thereto,
  - b. the terms of the Warrants have been established in accordance with the Warrant Agreement, if any, and the applicable definitive purchase, underwriting or similar agreement, and
  - c. the Warrants have been duly executed (in the case of certificated Warrants) and delivered in accordance with the Warrant Agreement, if any, and the applicable definitive purchase, underwriting or similar agreement for the consideration provided for therein, such Warrants will be legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

5. With respect to any Units, when:
  - a. the unit agreement relating to the Units (the “Unit Agreement”), if any, has been duly executed and delivered by the Company and each other party thereto,
  - b. the terms of the Units have been duly established in accordance with the Unit Agreement, if any, and the applicable definitive purchase, underwriting or similar agreement, and
  - c. the Units have been duly executed (in the case of certificated Units) and delivered in accordance with the Unit Agreement, if any, and the applicable definitive purchase, underwriting or similar agreement for the consideration provided for therein, the Units will be legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

The opinions expressed above are subject to the following exceptions, qualifications, limitations and assumptions:

- A. We render no opinion herein as to matters involving the laws of any jurisdiction other than the State of New York and the United States of America and, for purposes of paragraphs 2 and 3 above, the Delaware General Corporation Law. We are not admitted to practice in the State of Delaware; however, we are generally familiar with the Delaware General Corporation Law as currently in effect and have made such inquiries as we consider necessary to render the opinions contained in paragraphs 2 and 3 above. Without limitation, we do not express any opinion regarding any Delaware contract law. This opinion is limited to the effect of the current state of the laws of the State of New York, the United States of America and, to the limited extent set forth above, the laws of the State of Delaware and the facts as they currently exist. We assume no obligation to revise or supplement this opinion in the event of future changes in such laws or the interpretations thereof or such facts.
- B. The opinions above with respect to the Indenture, the Debt Securities, the Warrants, the Warrant Agreement, the Units and the Unit Agreement (collectively, the “Documents”) are each subject to (i) the effect of any bankruptcy, insolvency, reorganization, moratorium, arrangement or similar laws affecting the rights and remedies of creditors’ generally, including without limitation the effect of statutory or other laws regarding fraudulent transfers or preferential transfers, and (ii) general principles of equity, including without limitation concepts of materiality, reasonableness, good faith and fair dealing and the possible unavailability of specific performance, injunctive relief or other equitable remedies regardless of whether enforceability is considered in a proceeding in equity or at law.

- C. We express no opinion regarding the effectiveness of (i) any waiver of stay, extension or usury laws or of unknown future rights; (ii) any waiver (whether or not stated as such) under the Indenture or any other Document of, or any consent thereunder relating to, unknown future rights or the rights of any party thereto existing, or duties owing to it, as a matter of law; (iii) any waiver (whether or not stated as such) contained in the Indenture or any other Document of rights of any party, or duties owing to it, that is broadly or vaguely stated or does not describe the right or duty purportedly waived with reasonable specificity; (iv) provisions relating to indemnification, exculpation or contribution, to the extent such provisions may be held unenforceable as contrary to public policy or federal or state securities laws or due to the negligence or willful misconduct of the indemnified party; (v) any provision in any Document waiving the right to object to venue in any court; (vi) any agreement to submit to the jurisdiction of any Federal court; (vii) any waiver of the right to jury trial or (viii) any provision to the effect that every right or remedy is cumulative and may be exercised in addition to any other right or remedy or that the election of some particular remedy does not preclude recourse to one or more others.
- D. To the extent relevant to our opinions in paragraphs 4 and 5 and not covered by our opinions in paragraphs 1, 2 or 3, we have assumed that any securities, currencies or commodities underlying, comprising or issuable upon exchange, conversion or exercise of any Warrants or Units are validly issued, fully paid and non-assessable (in the case of an equity security) or a legal, valid and binding obligation of the issuer thereof, enforceable against such issuer in accordance with its terms.

You have informed us that you intend to issue Securities from time to time on a delayed or continuous basis, and we understand that prior to issuing any Securities pursuant to the Registration Statement (i) you will advise us in writing of the terms thereof, and (ii) you will afford us an opportunity to (x) review the operative documents pursuant to which such Securities are to be issued or sold (including the applicable offering documents), and (y) file such supplement or amendment to this opinion (if any) as we may reasonably consider necessary or appropriate.

We consent to the filing of this opinion as an exhibit to the Registration Statement, and we further consent to the use of our name under the caption "Legal Matters" in the Registration Statement and the prospectus that forms a part thereof. In giving these consents, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ Gibson, Dunn & Crutcher LLP

GIBSON DUNN

Gibson, Dunn & Crutcher LLP  
555 Mission Street  
San Francisco, CA 94105-0921  
Tel 415.393.8200  
www.gibsondunn.com

Client: 21357-00003

August 16, 2022

CTI BioPharma Corp.  
3101 Western Avenue, Suite 800  
Seattle, WA 98121

Re: *CTI BioPharma Corp.*  
*Registration Statement on Form S-3*

Ladies and Gentlemen:

We have examined the Registration Statement on Form S-3 (the "Registration Statement"), of CTI BioPharma Corp., a Delaware corporation (the "Company"), filed with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), and the prospectus supplement thereto dated August 16, 2022 (the "Prospectus Supplement"), in connection with the offering by the Company of up to \$100,000,000 of shares of the Company's common stock, par value \$0.001 per share (the "Shares").

In arriving at the opinion expressed below, we have examined originals, or copies certified or otherwise identified to our satisfaction as being true and complete copies of the originals, of specimen Common Stock certificates and such other documents, corporate records, certificates of officers of the Company and of public officials and other instruments as we have deemed necessary or advisable to enable us to render the opinions set forth below. In our examination, we have assumed without independent investigation the genuineness of all signatures, the legal capacity and competency of all natural persons, the authenticity of all documents submitted to us as originals and the conformity to original documents of all documents submitted to us as copies. We have further assumed that all offers and sales of the Shares will comply with the minimum offering price and pricing formula set forth in the authorization of the offering and sale of the Shares by the Company's Board of Directors or duly authorized committee thereof.

Based upon the foregoing, and subject to the assumptions, exceptions, qualifications and limitations set forth herein, we are of the opinion that the Shares, when issued against payment therefor as set forth in the Registration Statement and the Prospectus Supplement thereto, will be validly issued, fully paid and non-assessable.

We consent to the filing of this opinion as an exhibit to the Registration Statement, and we further consent to the use of our name under the caption "Legal Matters" in the Registration Statement and the Prospectus Supplement. In giving these consents, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the Rules and Regulations of the Commission.

Very truly yours,

/s/ Gibson, Dunn &amp; Crutcher LLP

**Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm**

We consent to the reference to our firm under the caption “Experts” in this Registration Statement (Form S-3) and related prospectus of CTI BioPharma Corp. for the registration of common stock, preferred stock, debt securities, warrants, rights, and units and to the incorporation by reference therein of our report dated March 31, 2022, with respect to the consolidated financial statements of CTI BioPharma Corp. included in its Annual Report (Form 10-K) for the year ended December 31, 2021, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Seattle, Washington  
August 16, 2022

## Calculation of Filing Fee Tables

**Form S-3**  
(Form Type)**CTI BioPharma Corp.**  
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

	Security Type	Security Class Title	Fee Calculation Rule	Amount Registered	Proposed Maximum Offering Price Per Share	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Fees to Be Paid	Equity	Common Stock, \$0.001 par value per share	457(o)					
	Equity	Preferred Stock, \$0.001 par value per share	457(o)					
	Debt	Debt Securities	457(o)					
	Other	Warrants	457(o)					
	Other	Units	457(o)					
	Unallocated (Universal) Shelf		457(o)	(1)(2)	(3)	\$200,000,000	\$92.70 per \$1,000,000	\$18,540(4)
Fees Previously Paid								
	<b>Total Offering Amounts</b>					\$200,000,000		\$18,540
	<b>Total Fees Previously Paid</b>							—
	<b>Total Fee Offsets</b>							\$10,255(5)
	<b>Net Fee Due</b>							\$8,285

- (1) This registration statement registers such indeterminate number of shares of common stock and preferred stock, such indeterminate principal amount of debt securities, such indeterminate number of warrants to purchase common stock, preferred stock and/or debt securities of one or more series, such indeterminate number of rights to purchase common stock, preferred stock and/or debt securities of one or more series, and such indeterminate number of units representing an interest in one or more shares of common stock or preferred stock, debt securities, warrants and/or rights in any combination as shall have an aggregate initial offering price not to exceed \$200,000,000. Any securities registered hereunder may be sold separately or as units with other securities registered hereunder.
- (2) Includes rights to acquire common stock or preferred stock of the Company under any shareholder rights plan then in effect, if applicable under the terms of any such plan.
- (3) Estimated solely for the purpose of calculating the registration fee. No separate consideration will be received for shares of common stock that are issued upon conversion of debt securities or preferred stock or upon exercise of common stock warrants registered hereunder. The aggregate maximum offering price of all securities issued pursuant to this registration statement will not exceed \$200,000,000.
- (4) The registration fee has been calculated in accordance with Rule 457(o) under the Securities Act of 1933, as amended.

- 
- (5) Pursuant to Rule 457(p), the registrant hereby offsets the registration fee required in connection with this filing by \$10,255, which represents a portion of the registration fee previously paid by the registrant with respect to certain unsold securities previously registered on a registration statement on Form S-1 (Registration No. 333-251161) (the "Prior Registration Statement"), initially filed with the Securities and Exchange Commission on December 7, 2020.