

Sorrento Therapeutics, Inc.  
Form 424B5  
October 28, 2013  
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**Filed Pursuant to Rule 424(b)(5)  
Registration No. 333-189538**

**PROSPECTUS SUPPLEMENT**

(To the Prospectus dated July 22, 2013)

**4,150,000 Shares**

**Common Stock**

We are offering 4,150,000 shares of common stock. On July 30, 2013, we effected a 1-for-25 reverse stock split of our issued and outstanding common stock.

Our common stock was previously quoted on the OTCQB marketplace, operated by the OTC Markets Group, under the symbol SRNE. We have received approval to list the common stock on The NASDAQ Capital Market under the symbol SRNE. On October 24, 2013, the last reported sale price of our common stock on the OTCQB was \$7.86 per share.

**Our business and an investment in our securities involves a high degree of risk. See Risk Factors beginning on page S-6 of this prospectus supplement and on page 25 of the accompanying prospectus.**

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

	<b>Per Share</b>	<b>Total</b>
Public offering price	\$ 7.25	\$ 30,087,500
Underwriting discount <sup>(1)</sup>	\$ 0.5075	\$ 2,106,125
Proceeds, before expenses, to us	\$ 6.7425	\$ 27,981,375

(1) The underwriters will receive compensation in addition to the underwriting discount. See Underwriting beginning on page S-43 of this prospectus supplement for a description of the compensation payable to the underwriters.

The underwriters may also purchase up to an additional 622,500 shares of common stock from us at the public offering price, less the underwriting discount, within 45 days from the date of this prospectus supplement to cover overallocments, if any.

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The underwriters expect to deliver the shares against payment therefor on or about October 30, 2013.

*Sole Book-Running Manager*

**Aegis Capital Corp**

*Co-Manager*

**CRT Capital**

October 24, 2013

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**ABOUT THIS PROSPECTUS SUPPLEMENT**

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus, gives more general information about securities we may offer from time to time, some of which does not apply to this offering. Generally, when we refer to this prospectus, we are referring to both parts of this document combined together with all documents incorporated by reference. If the description of the offering varies between this prospectus supplement and the accompanying prospectus, you should rely on the information contained in this prospectus supplement. However, if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference into this prospectus supplement or the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement. You should rely only on the information contained in or incorporated by reference into this prospectus supplement or contained in or incorporated by reference into the accompanying prospectus to which we have referred you. We have not authorized anyone to provide you with information that is different. If anyone provides you with different or inconsistent information, you should not rely on it. The information contained in, or incorporated by reference into, this prospectus supplement and contained in, or incorporated by reference into, the accompanying prospectus is accurate only as of the respective dates thereof, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or of any sale of securities. It is important for you to read and consider all information contained in this prospectus supplement and the accompanying prospectus, including the documents incorporated by reference herein and therein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you under the captions “Where You Can Find More Information” and “Incorporation of Documents by Reference” in this prospectus supplement and in the accompanying prospectus.

We are offering to sell, and are seeking offers to buy, the common stock only in jurisdictions where such offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of the common stock in certain jurisdictions or to certain persons within such jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about and observe any restrictions relating to the offering of the common stock and the distribution of this prospectus supplement and the accompanying prospectus outside the United States. This prospectus supplement and the accompanying prospectus do 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 and the accompanying prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

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**PROSPECTUS SUPPLEMENT SUMMARY**

*This summary highlights information contained elsewhere or incorporated by reference into this prospectus supplement and the accompanying prospectus. This summary does not contain all of the information that you should consider before deciding to invest in our securities. You should read this entire prospectus supplement and the accompanying prospectus carefully, including the Risk Factors section contained in this prospectus supplement and our consolidated financial statements and the related notes and the other documents incorporated by reference into this prospectus supplement and in the accompanying prospectus. Unless we have indicated otherwise or the context otherwise requires, references in this prospectus supplement, the accompanying prospectus or the documents incorporated by reference herein and therein to the Company, we, us and our refer to Sorrento Therapeutics, Inc. and its subsidiaries. The discussion of our business in this summary reflects, on a pro forma basis, our merger with IgDraSol, Inc. which was effected on September 9, 2013.*

*Unless otherwise indicated all share amounts and per share amounts in this prospectus supplement reflect a 1-for-25 reverse stock split of our issued and outstanding shares of common stock that was effected on July 30, 2013.*

**Business Overview**

We are a biopharmaceutical company engaged in the discovery, acquisition, development and commercialization of proprietary drug therapeutics for addressing significant unmet medical needs in the United States, Europe and additional international markets. Our primary therapeutic focus is oncology but we are also developing therapeutic products for other indications, including inflammation, metabolic disorders, and infectious diseases. Our pipeline consists of the lead oncology product candidate Cynviloq, a micellar paclitaxel formulation, as well as fully human therapeutic antibodies derived from our proprietary G-MAB<sup>®</sup> library platform and antibody drug conjugates, or ADCs, antibody formulated drug conjugates, or AfDCs, and recombinant intravenous immunoglobulin, or rIVIG.

**Recent Developments**

On July 29, 2013, IgDraSol, Inc., or IgDraSol, received official meeting minutes from an End-of-Phase 2 meeting held on July 23, 2013 for Cynviloq (or IG-001) with the U.S. Food and Drug Administration, or FDA. Cynviloq (paclitaxel polymeric micelle) is initially under development for the treatment of metastatic breast cancer, or MBC, and non-small cell lung cancer, or NSCLC, in the U.S. The FDA Division of Oncology Products 1 agreed that the data available from: (i) the postmarketing surveillance studies conducted in ex-U.S. territories for MBC and NSCLC, (ii) Phase 1-3 studies for MBC, and (iii) Phase 1-2 studies in NSCLC, Ovarian, Bladder, and Pancreatic cancers are sufficient to support pursuing the 505(b)(2) Bioequivalence (BE) regulatory submission pathway approach using Abraxane<sup>®</sup> and Taxol<sup>®</sup> as the Reference Listed Drugs. Abraxane<sup>®</sup> is an albumin-bound paclitaxel (nab-paclitaxel) product approved for MBC, NSCLC and pancreatic cancer indications. Taxol<sup>®</sup> is a cremophor-based paclitaxel product approved for these indications as well as other cancer indications. IgDraSol anticipates filing its BE protocol with the FDA by the end of 2013. Sufficiency of the data for approval will be a review issue after a New Drug Application, or NDA, filing.

On September 9, 2013, we exercised our previously disclosed option to acquire IgDraSol and pursuant to an agreement and plan of merger dated as of such date, we issued 3,006,641 shares of our common stock, to the IgDraSol stockholders. Upon the achievement of a certain regulatory milestone, we will be required to issue an additional 1,306,272 shares of common stock to former IgDraSol stockholders.

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In connection with the merger, we appointed (i) Dr. Vuong Trieu, the former Chief Executive Officer of IgDraSol, as our Chief Scientific Officer and (ii) George Uy, the former Chief Commercial Officer of IgDraSol, as our Chief Commercial Officer. In addition, Dr. Trieu and Mr. Jaisim Shah were appointed to our board of directors.

Cynviloq is a micellar diblock copolymeric paclitaxel formulation drug product that is currently approved and marketed in several countries, including South Korea for MBC and NSCLC under the trade name Genexol-PM<sup>®</sup>. IgDraSol obtained exclusive distribution rights for Cynviloq in the United States and 27 countries of the European Union, or EU, from Samyang Biopharmaceuticals Corporation, a South Korean corporation.

On September 12, 2013, we entered into a non-binding letter of intent to acquire a private company with proprietary technologies useful for generating ADCs in exchange for shares of our common stock. We intend to enter into a definitive agreement by December 31, 2013.

On September 27, 2013, we entered into a loan and security agreement with Oxford Finance LLC and Silicon Valley Bank for a term loan of \$5.0 million which was funded at closing. The interest rate on the term loan is 7.95% per annum. We will make interest only payments on the outstanding amount of the loan on a monthly basis until March 31, 2014, after which equal monthly payment of principal and interest shall be due. In the event we receive at least \$20 million in net proceeds from an equity offering or a one-time, non-refundable up front payment in connection with a joint venture, collaboration or other partnering transaction, the interest only payment period will be extended to October 31, 2014. The maturity date of the term loan is April 1, 2017. The term loan is collateralized by a security interest in all of our assets except intellectual property. Our intellectual property is subject to a negative pledge. In connection with the term loan, the lenders received a warrant to purchase an aggregate 31,250 shares of our common stock at an exercise price of \$8.00 per share exercisable for seven years from the date of issuance.

On October 9, 2013, we entered into an Agreement and Plan of Merger and Reorganization and acquired Sherrington Pharmaceuticals, Inc. in exchange for 200,000 shares of our Common Stock. Sherrington is a privately-held company focused on the development of a chronic pain treatment for end-stage cancer patients and other severe pain indications.

On October 21, 2013, we issued an aggregate \$1,850,000 principal amount of convertible promissory notes to various investors. The convertible promissory notes bear interest at 7% and the maturity date is April 15, 2017. On the date of this offering, the aggregate principal amount of the convertible promissory notes plus accrued interest converted into an aggregate 255,824 shares of common stock.

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**Corporate Information**

On September 21, 2009, QuikByte Software, Inc., a shell company, or QuikByte, acquired Sorrento Therapeutics, Inc., a privately held Delaware corporation, or STI, in a reverse merger, or Merger. Pursuant to the Merger, all of the issued and outstanding shares of STI common stock were exchanged into shares of QuikByte common stock and STI became a wholly owned subsidiary of QuikByte. STI and QuikByte reincorporated in Delaware in December 2009, and on December 4, 2009, STI merged with and into QuikByte, the separate corporate existence of STI ceased and QuikByte continued as the surviving corporation. Contemporaneously, QuikByte Software, Inc. changed its name to Sorrento Therapeutics, Inc. Our principal executive office is located at 6042 Cornerstone Ct. West, Suite B, San Diego, California 92121. Our telephone number is (858) 210-3700 and our website address is [www.sorrentotherapeutics.com](http://www.sorrentotherapeutics.com). The information on our website is not a part of, and should not be construed as being incorporated by reference into, this prospectus supplement or the accompanying prospectus.



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**The Offering**

Common stock offered by us	4,150,000 shares of common stock.
Over-allotment option	We have granted the underwriters a 45-day option to purchase up to 622,500 of additional shares of our common stock from us at the public offering price less underwriting discounts and commissions.
Common stock to be outstanding after this offering	21,055,558 shares.
Use of Proceeds	We currently intend to use the net proceeds from this offering to fund our research and development activities, including our registrational clinical trial of Cynviloq, for working capital and other general corporate purposes, and possibly acquisitions of other companies, products or technologies.
Risk Factors	See Risk Factors beginning on page S-6 of this prospectus supplement and other information included or incorporated by reference into this prospectus supplement and the accompanying prospectus for a discussion of factors you should carefully consider before investing in our securities.
NASDAQ Capital Market symbol	SRNE

Unless we indicate otherwise, the number of shares to be outstanding after this offering is based on 16,479,734 shares of common stock outstanding as of September 30, 2013 and excludes;

509,400 shares of our common stock issuable upon exercise of outstanding stock options under our 2009 Stock Incentive Plan at a weighted average exercise price of \$4.44 per share, with 833,400 shares remaining available for future grant under such plan;

3,200 shares of our common stock issuable upon exercise of outstanding stock options granted to non-employee directors at an exercise price of \$1.12 per share;

39,250 shares of our common stock issuable upon exercise of outstanding warrants at a weighted average exercise price of \$6.60 per share; and

182,600 shares of common stock underlying the warrants to be issued to the underwriters in connection with this offering. Unless otherwise indicated, this prospectus supplement reflects and assumes the following:

no exercise by the underwriters of their option to purchase up to an additional 622,500 shares of common stock to cover over-allotments, if any; and

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the automatic conversion of \$1,850,000 aggregate principal amount of convertible promissory notes plus accrued interest into 255,824 shares of common stock on the date of this offering.

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**RISK FACTORS**

*You should carefully consider the risks described below before making an investment decision. The risks described below are not the only ones we face. Additional risks we are not presently aware of or that we currently believe are immaterial may also impair our business operations. Our business could be harmed by any of these risks. The trading price of our common stock could decline due to any of these risks, and you may lose all or part of your investment. In assessing these risks, you should also refer to the other information contained or incorporated by reference into this prospectus supplement and the accompanying prospectus, including our financial statements and related notes.*

**Risks Related to Our Financial Position and Capital Requirements**

*We are a development-stage company subject to all of the risks and uncertainties of a new business, including the risk that we or our partners may never develop, complete development or market any of our product candidates or generate product related revenues.*

We are a development-stage biopharmaceutical company that began operating and commenced research and development activities in 2009. Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. There is no assurance that our libraries of fully-human mAbs will be suitable for diagnostic or therapeutic use, or that we will be able to identify and isolate therapeutics product candidates, or develop, market and commercialize these candidates. We do not expect any of our fully-human mAb, ADC, AfDC, Cynviloq or related companion diagnostic product candidates to be commercially available for a few years, if at all. Even if we are able to commercialize our product candidates, there is no assurance that these candidates would generate revenues or that any revenues generated would be sufficient for us to become profitable or thereafter maintain profitability.

*We do not have any products that are approved for commercial sale and therefore do not expect to generate any revenues from product sales in the foreseeable future, if ever.*

We have not generated any product related revenues to date, and do not expect to generate any such revenues for at least the next several years, if at all. To obtain revenues from sales of our product candidates, we must succeed, either alone or with third parties, in developing, obtaining regulatory approval for, manufacturing and marketing products with commercial potential. We may never succeed in these activities, and we may not generate sufficient revenues to continue our business operations or achieve profitability.

*We have incurred significant losses since inception and anticipate that we will incur continued losses for the foreseeable future.*

As of December 31, 2012 and June 30, 2013, we had an accumulated deficit of \$10,950,299 and \$18,209,249, respectively. We continue to incur significant research and development and other expenses related to our ongoing and acquired operations. We have incurred operating losses since our inception, expect to continue to incur significant operating losses for the foreseeable future, and we expect these losses to increase as we: (i) continue to identify and advance a number of potential drug candidates into preclinical and clinical development activities, (ii) integrate IgDraSol and fund its operations, (iii) continue our development of, and seek regulatory approvals for, our product candidates, and begin to commercialize any approved products, and (iv) expand our corporate infrastructure, including the costs associated with being a public company. As such, we are subject to all of the risks incidental to the development of new biopharmaceutical products and related companion diagnostics, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders equity and working capital.

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***Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern, which may hinder our ability to obtain future financing.***

Our consolidated financial statements as of December 31, 2012 were prepared under the assumption that we will continue as a going concern for the next twelve months. Our independent registered public accounting firm has issued a report that included an explanatory paragraph referring to our recurring losses from operations and expressing substantial doubt in our ability to continue as a going concern without additional capital becoming available. Our ability to continue as a going concern is dependent upon our ability to obtain additional equity or debt financing, attain further operating efficiencies, reduce expenditures, and, ultimately, to generate revenue. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

***We will require substantial additional funding which may not be available to us on acceptable terms, or at all. If we fail to raise the necessary additional capital, we may be unable to complete the development and commercialization of our product candidates, or continue our development programs.***

Our operations have consumed substantial amounts of cash since inception. We expect to significantly increase our spending to advance the preclinical and clinical development of our product candidates and launch and commercialize any product candidates for which we receive regulatory approval, including building our own commercial organizations to address certain markets. We will require additional capital for the further development and commercialization of our product candidates, as well as to fund our other operating expenses and capital expenditures.

We cannot be certain that additional funding will be available on acceptable terms, or at all. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us we may have to significantly delay, scale back or discontinue the development or commercialization of one or more of our product candidates. We may also seek collaborators for one or more of our current or future product candidates at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available. Any of these events could significantly harm our business, financial condition and prospects.

Our future capital requirements will depend on many factors, including:

the progress of the development of our fully-human mAb, ADC, AfDC, Cynviloq or related companion diagnostic product candidates;

the number of product candidates we pursue;

the time and costs involved in obtaining regulatory approvals;

the costs involved in filing and prosecuting patent applications and enforcing or defending patent claims;

our plans to establish sales, marketing and/or manufacturing capabilities;

the effect of competing technological and market developments;

the terms and timing of any collaborative, licensing and other arrangements that we may establish;

general market conditions for offerings from biopharmaceutical companies;

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our ability to establish, enforce and maintain selected strategic alliances and activities required for product commercialization; and

our revenues, if any, from successful development and commercialization of our product candidates.

In order to carry out our business plan and implement our strategy, we anticipate that we will need to obtain additional financing from time to time and may choose to raise additional funds through strategic collaborations, licensing arrangements, public or private equity or debt financing, bank lines of credit, asset sales, government grants, or other arrangements. We cannot be sure that any additional funding, if needed, will be available on

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terms favorable to us or at all. Furthermore, any additional equity or equity-related financing may be dilutive to our stockholders, and debt or equity financing, if available, may subject us to restrictive covenants and significant interest costs. If we obtain funding through a strategic collaboration or licensing arrangement, we may be required to relinquish our rights to certain of our product candidates or marketing territories.

Further, the NIH has notified all grant recipients that due to the current Congressional budget sequestration, the NIH may not be able to issue continuation awards, or it may be required to negotiate a reduction in the scope of existing awards to meet the constraints imposed. Additionally, plans for new grants or cooperative agreements may be re-scoped, delayed, or canceled depending on the nature of the work and the availability of resources. As a result, we cannot assure you that we will receive the funding under our existing NIH grants, and we may not be successful in securing additional grants from the NIH in the future.

Our inability to raise capital when needed would harm our business, financial condition and results of operations, and could cause our stock price to decline or require that we wind down our operations altogether.

## **Risks Related to Our Business and Industry**

*We have a limited operating history and are heavily dependent on the success of our technologies and product candidates, and we cannot give any assurance that any of our product candidates will receive regulatory approval, which is necessary before they can be commercialized.*

To date, we have invested a significant portion of our efforts and financial resources in the acquisition and development of our product candidates. We have not demonstrated our ability to perform the functions necessary for the successful acquisition, development or commercialization of the technologies we are seeking to develop. Because we only recently commenced operations, we have a limited operating history upon which you can evaluate our business and prospects. Also, as an early stage company, we have limited experience and have not yet demonstrated an ability to successfully overcome many of the risks and uncertainties frequently encountered by companies in new and rapidly evolving fields, particularly in the biopharmaceutical area. Our future success is substantially dependent on our ability to successfully develop, obtain regulatory approval for, and then successfully commercialize such product candidates. Our product candidates are currently in preclinical development or in clinical trials. Our business depends entirely on the successful development and commercialization of our product candidates, which may never occur. We currently generate no revenues from sales of any drugs, and we may never be able to develop or commercialize a marketable drug.

The successful development, and any commercialization, of our technologies and any product candidates would require us to successfully perform a variety of functions, including:

developing our technology platform;

identifying, developing, manufacturing and commercializing product candidates;

entering into successful licensing and other arrangements with product development partners;

participating in regulatory approval processes;

formulating and manufacturing products; and

conducting sales and marketing activities.

Our operations have been limited to organizing our company, acquiring, developing and securing our proprietary technology and identifying and obtaining early preclinical data or clinical data for various product candidates. These operations provide a limited basis for you to assess our ability to continue to develop our technology, identify product candidates, develop and commercialize any product candidates we are able to

identify and enter into successful collaborative arrangements with other companies, as well as for you to assess

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the advisability of investing in our securities. Each of these requirements will require substantial time, effort and financial resources.

Each of our product candidates will require additional preclinical or clinical development, management of preclinical, clinical and manufacturing activities, regulatory approval in multiple jurisdictions, obtaining manufacturing supply, building of a commercial organization, and significant marketing efforts before we generate any revenues from product sales. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the United States Food and Drug Administration, or FDA, or comparable foreign regulatory authorities, and we may never receive such regulatory approval for any of our product candidates. In addition, our product development programs contemplate the development of companion diagnostics by our third-party collaborators. Companion diagnostics are subject to regulation as medical devices and must themselves be approved for marketing by the FDA or certain other foreign regulatory agencies before we may commercialize our product candidates.

***Clinical drug development involves a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.***

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through preclinical studies and initial clinical trials. It is not uncommon for companies in the biopharmaceutical industry to suffer significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. Our future clinical trial results may not be successful.

This drug candidate development risk is heightened by any changes in the planned clinical trials compared to the completed clinical trials. As product candidates are developed through preclinical to early and late stage clinical trials towards approval and commercialization, it is customary that various aspects of the development program, such as manufacturing and methods of administration, are altered along the way in an effort to optimize processes and results. While these types of changes are common and are intended to optimize the product candidates for late stage clinical trials, approval and commercialization, such changes do carry the risk that they will not achieve these intended objectives.

We have not previously initiated or completed a corporate-sponsored clinical trial. Consequently, we may not have the necessary capabilities, including adequate staffing, to successfully manage the execution and completion of any clinical trials we initiate, including our planned clinical trials of IG-001, in a way that leads to our obtaining marketing approval for our product candidates in a timely manner, or at all.

In the event we are able to conduct a pivotal clinical trial of a product candidate, the results of such trial may not be adequate to support marketing approval. Because our product candidates are intended for use in life-threatening diseases, in some cases we ultimately intend to seek marketing approval for each product candidate based on the results of a single pivotal clinical trial. As a result, these trials may receive enhanced scrutiny from the FDA. For any such pivotal trial, if the FDA disagrees with our choice of primary endpoint or the results for the primary endpoint are not robust or significant relative to control, are subject to confounding factors, or are not adequately supported by other study endpoints, including possibly overall survival or complete response rate, the FDA may refuse to approve a BLA based on such pivotal trial. The FDA may require additional clinical trials as a condition for approving our product candidates. For instance, if bioequivalence, or BE, is not established between Abraxane<sup>®</sup> and Cynviloq, then additional clinical trials to assess safety and /or efficacy of our formulation may be needed.



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In some of our future trials, we may combine Cynviloq or Tocosol® with other therapies such as chemotherapy or immunotherapy. We have not yet tested these combinations.

### ***Delays in clinical testing could result in increased costs to us and delay our ability to generate revenue.***

Although we are planning for certain clinical trials relating to Cynviloq, there can be no assurance that the FDA will accept our proposed trial designs. We may experience delays in our clinical trials and we do not know whether planned clinical trials will begin on time, need to be redesigned, enroll patients on time or be completed on schedule, if at all. Clinical trials can be delayed for a variety of reasons, including delays related to:

obtaining regulatory approval to commence a trial;

reaching agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;

obtaining institutional review board, or IRB, approval at each site;

recruiting suitable patients to participate in a trial;

clinical sites deviating from trial protocol or dropping out of a trial;

having patients complete a trial or return for post-treatment follow-up;

developing and validating companion diagnostics on a timely basis, if required;

adding new clinical trial sites; or

manufacturing sufficient quantities of product candidate for use in clinical trials.

Patient enrollment, a significant factor in the timing of clinical trials, is affected by many factors including the size and nature of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the trial, the design of the clinical trial, competing clinical trials and clinicians' and patients' perceptions as to the potential advantages of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating. Furthermore, we intend to rely on CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials and we intend to have agreements governing their committed activities, we will have limited influence over their actual performance.

We could encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by the Data Safety Monitoring Board, or DSMB, for such trial or by the FDA or other regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial.

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If we experience delays in the completion of, or termination of, any clinical trial of our product candidates, the commercial prospects of our product candidates will be harmed, and our ability to generate product revenues from any of these product candidates will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow down our product candidate development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may harm our business, financial condition and prospects significantly. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

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### ***Competition for patients in conducting clinical trials may prevent or delay product development and strain our limited financial resources.***

Many pharmaceutical companies are conducting clinical trials in patients with the disease indications that our potential drug products target. As a result, we must compete with them for clinical sites, physicians and the limited number of patients who fulfill the stringent requirements for participation in clinical trials. Also, due to the confidential nature of clinical trials, we do not know how many of the eligible patients may be enrolled in competing studies and who are consequently not available to us for our clinical trials. Our clinical trials may be delayed or terminated due to the inability to enroll enough patients. Patient enrollment depends on many factors, including the size of the patient population, the nature of the trial protocol, the proximity of patients to clinical sites and the eligibility criteria for the study. The delay or inability to meet planned patient enrollment may result in increased costs and delays or termination of the trial, which could have a harmful effect on our ability to develop products.

### ***The regulatory approval processes of the FDA and comparable foreign authorities are lengthy, time consuming and inherently unpredictable, and if we are ultimately unable to obtain regulatory approval for our product candidates, our business will be substantially harmed.***

The time required to obtain approval by the FDA and comparable foreign authorities is unpredictable but typically takes many years following the commencement of clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions. We have not obtained regulatory approval for any product candidate and it is possible that none of our existing product candidates or any product candidates we may seek to develop in the future will ever obtain regulatory approval.

Our product candidates could fail to receive regulatory approval for many reasons, including the following:

the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;

we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for its proposed indication;

the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;

the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;

the data collected from clinical trials of our product candidates may not be sufficient to support the submission of an NDA or other submission or to obtain regulatory approval in the United States or elsewhere;

the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies;

the FDA or comparable foreign regulatory authorities may fail to approve the companion diagnostics we contemplate developing with partners; and

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the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

This lengthy approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market our product candidates, which would significantly harm our business, results of operations and prospects.

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

We have not previously submitted a biologics license application, or BLA, or a New Drug Application, or NDA, to the FDA, or similar drug approval filings to comparable foreign authorities, for any product candidate, and we cannot be certain that any of our product candidates will be successful in clinical trials or receive regulatory approval. Further, our product candidates may not receive regulatory approval even if they are successful in clinical trials. If we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations. Even if we successfully obtain regulatory approvals to market one or more of our product candidates, our revenues will be dependent, in part, upon our collaborators' ability to obtain regulatory approval of the companion diagnostics to be used with our product candidates, as well as the size of the markets in the territories for which we gain regulatory approval and have commercial rights. If the markets for patients that we are targeting for our product candidates are not as significant as we estimate, we may not generate significant revenues from sales of such products, if approved.

We plan to seek regulatory approval to commercialize our product candidates both in the United States, the European Union and in additional foreign countries. While the scope of regulatory approval is similar in other countries, to obtain separate regulatory approval in many other countries we must comply with numerous and varying regulatory requirements of such countries regarding safety and efficacy and governing, among other things, clinical trials and commercial sales, pricing and distribution of our product candidates, and we cannot predict success in these jurisdictions.

***Our most rapid and cost effective access to market approval for Cynviloq depends on meeting the conditions for approval under Section 505(b)(2) of the Federal Food, Drug and Cosmetic Act, or FDCA.***

We are seeking approval for Cynviloq under Section 505(b)(2) of the FDCA, enacted as part of the Drug Price Competition and Patent Restoration Act of 1984, otherwise known as the Hatch-Waxman Act, which permits applicants to rely in part on preclinical and clinical data generated by third parties. For instance, FDA currently does not know if a BE will be sufficient to support the MBC and NSCLC indications. Sufficiency of the data for approval will be a review issue after an NDA filing.

Specifically, with respect to Cynviloq, we are relying in part on third party data on paclitaxel, which is the active ingredient in Cynviloq and the previously approved products Abraxane<sup>®</sup> and Taxol<sup>®</sup>. There can be no assurance that the FDA will not require us to conduct additional preclinical or clinical studies or otherwise obtain new supplementary data with respect to some or all of the data upon which we may rely prior to approving a Cynviloq NDA.

Our NDA also relies on prior FDA findings of safety and effectiveness of previously approved products, and we will make certifications in our NDA under Section 505(b)(2) requirements based on the listed patents in the FDA publication Approved Drug Products with Therapeutics Equivalence Evaluations, or the Orange Book, for certain of these referenced products. In the event that one or more patents is listed in the Orange Book for the referenced product after our submission of additional information in support of our NDA for Cynviloq, we may also be required to evaluate the applicability of these patents to Cynviloq and submit additional certifications. A paragraph III certification, stating that a listed patent has not expired, but will expire on a particular date, may delay the approval of Cynviloq until the expiration of the patent. A paragraph IV certification, stating that a listed patent is invalid, unenforceable, or not infringed by Cynviloq may require us to notify the patent owner and the holder of the NDA for the referenced product of the existence of the Cynviloq NDA, and may result in patent litigation against us and the entry of a 30-month stay of FDA ability to issue final approval of the 505(b)(2) NDA for Cynviloq.

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Our success also relies, in part, on obtaining Hatch-Waxman marketing exclusivity in connection with any approval of our NDA for Cynviloq. Such exclusivity protection would preclude the FDA from approving a marketing application for a duplicate of Cynviloq, a product candidate that the FDA views as having the same conditions of approval as Cynviloq (for example, the same indication, the same route of delivery and/or other conditions of use), or a 505(b)(2) NDA submitted to the FDA with Cynviloq as the reference product, for a period of three years from the date of Cynviloq approval, although the FDA may accept and commence review of such applications. This form of exclusivity may not prevent FDA approval of an NDA that relies only on its own data to support the change or innovation. Similarly, if, prior to approval of the Cynviloq NDA, another company obtains approval for a product candidate under, in the view of the FDA, the same conditions of approval that we are seeking for Cynviloq, Cynviloq could be blocked until the other company's three-year Hatch-Waxman marketing exclusivity expires.

***Our approach to the discovery and development of product candidates that target AfDCs, ADCs and rIVIG is unproven, and we do not know whether we will be able to develop any products of commercial value.***

AfDCs, ADCs and rIVIG are emerging technologies and, consequently, it is conceivable that such technologies may ultimately fail to identify commercially viable drugs to treat human patients with cancer or other diseases.

***Our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.***

Undesirable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign authorities. To date, patients treated with Cynviloq have experienced drug-related side effects such as neutropenia, leukopenia, anemia, thrombocytopenia, peripheral neuropathy, myalgia nausea, vomiting, diarrhea, alopecia, rash, pruritus and hypersensitivity reactions. The clinical evaluation of Cynviloq is still in the early stages, but as is the case with all oncology drugs, it is likely that there may be side effects associated with its use. Results of our trials could reveal a high and unacceptable severity and prevalence of these or other side effects. In such an event, our trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our product candidates for any or all targeted indications. The drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects significantly.

Additionally if one or more of our product candidates receives marketing approval, and we or others later identify undesirable side effects caused by such products, a number of potentially significant negative consequences could result, including:

regulatory authorities may withdraw approvals of such product;

regulatory authorities may require additional warnings on the label;

we may be required to create a medication guide outlining the risks of such side effects for distribution to patients;

we could be sued and held liable for harm caused to patients; and

our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate or for particular indications of a product candidate, if approved, and could significantly harm our business, results of operations and prospects.

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***We rely on third parties to conduct our preclinical and clinical trials. If these third parties do not successfully perform their contractual legal and regulatory duties or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.***

We have relied upon and plan to continue to rely upon third-party CROs to monitor and manage data for our ongoing preclinical and clinical programs. We rely on these parties for execution of our preclinical and clinical trials, and control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on the CROs does not relieve us of our regulatory responsibilities. We and our CROs are required to comply with current good clinical practices, or cGCP, which are regulations and guidelines enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area, or EEA, and comparable foreign regulatory authorities for all of our products in clinical development. Regulatory authorities enforce these cGCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of our CROs fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA, the European Medicines Agency, or EMA, or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials comply with cGCP regulations. In addition, our clinical trials must be conducted with product produced under current good manufacturing practices, or cGMP, regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

If any of our relationships with these third-party CROs terminate, we may not be able to enter into arrangements with alternative CROs or to do so on commercially reasonable terms. In addition, our CROs are not our employees, and except for remedies available to us under our agreements with such CROs, we cannot control whether or not they devote sufficient time and resources to our on-going clinical, nonclinical and preclinical programs. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. As a result, our results of operations and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenues could be delayed.

Switching or adding additional CROs involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we carefully manage our relationships with our CROs, there can be no assurance that we will not encounter similar challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition and prospects.

***We expect to rely on third parties to manufacture our clinical drug supplies and we intend to rely on third parties to produce commercial supplies of any approved product candidate, and our commercialization of any of our product candidates could be stopped, delayed or made less profitable if those third parties fail to obtain approval of the FDA or comparable foreign regulatory authorities, fail to provide us with sufficient quantities of drug product or fail to do so at acceptable quality levels or prices.***

We do not currently have nor do we plan to acquire the infrastructure or capability internally to manufacture our clinical drug supplies for use in the conduct of our clinical trials, and we lack the resources and the capability to manufacture any of our product candidates on a clinical or commercial scale. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with the cGMP regulatory requirements for manufacture of both active drug substances and finished drug products. If our contract manufacturers cannot successfully manufacture material that conforms to the strict

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regulatory requirements of the FDA or others, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved.

***Material necessary to manufacture our product candidates may not be available on commercially reasonable terms, or at all, which may delay the development and commercialization of our product candidates.***

We rely on our manufacturers to produce or purchase from third-party suppliers the materials necessary to produce our product candidates for our clinical trials. There are a limited number of suppliers for raw materials that we use to manufacture our drugs and there may be a need to assess alternate suppliers to prevent a possible disruption of the manufacture of the materials necessary to produce our product candidates for our clinical trials, and if approved, ultimately for commercial sale. We do not have any control over the process or timing of the acquisition of these raw materials by our manufacturers. Except for the manufacture and supply of Cynviloq, we currently do not have any agreements for the commercial production of these raw materials. Any significant delay in the supply of a product candidate, or the raw material components thereof, for an ongoing clinical trial due to the need to replace a third-party manufacturer could considerably delay completion of our clinical trials, product testing and potential regulatory approval of our product candidates. If our manufacturers or we are unable to purchase these raw materials after regulatory approval has been obtained for our product candidates, the commercial launch of our product candidates would be delayed or there would be a shortage in supply, which would impair our ability to generate revenues from the sale of our product candidates.

We expect to continue to depend on third-party contract manufacturers for the foreseeable future. We have not entered into long-term agreements with all of our current contract manufacturers or with any alternate fill/finish suppliers, and though we intend to do so prior to commercial launch in order to ensure that we maintain adequate supplies of finished drug product, we may be unable to enter into such an agreement or do so on commercially reasonable terms, which could have a material adverse impact upon our business. We currently obtain our supplies of finished drug product through individual purchase orders.

***We may not be able to manufacture our product candidates in commercial quantities, which would prevent us from commercializing our product candidates.***

We are dependent on our third party manufacturers to conduct process development and scale-up work necessary to support greater clinical development and commercialization requirements for our product candidates. Carrying out these activities in a timely manner, and on commercially reasonable terms, is critical to the successful development and commercialization of our product candidates. We expect our third-party manufacturers are capable of providing sufficient quantities of our product candidates to meet anticipated clinical and full-scale commercial demands, however if third parties with whom we currently work are unable to meet our supply requirements, we will need to secure alternate suppliers. While we believe that there are other contract manufacturers having the technical capabilities to manufacture our product candidates, we cannot be certain that identifying and establishing relationships with such sources would not result in significant delay or material additional costs.

***We currently have no sales and marketing organization. If we are unable to establish a direct sales force in the United States to promote our products, the commercial opportunity for our products may be diminished.***

We currently have no sales and marketing organization. If any of our product candidates are approved by the FDA, we intend to market that product through our own sales force. We will incur significant additional expenses and commit significant additional management resources to establish our sales force. We may not be able to establish these capabilities despite these additional expenditures. We will also have to compete with other



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pharmaceutical and biotechnology companies to recruit, hire and train sales and marketing personnel. If we elect to rely on third parties to sell our product candidates in the United States, we may receive less revenue than if we sold our products directly. In addition, although we would intend to use due diligence in monitoring their activities, we may have little or no control over the sales efforts of those third parties. In the event we are unable to develop our own sales force or collaborate with a third party to sell our product candidates, we may not be able to commercialize our product candidates which would negatively impact our ability to generate revenue.

### ***We may need others to market and commercialize our product candidates in international markets.***

In the future, if appropriate regulatory approvals are obtained, we may commercialize our product candidates in international markets. However, we have not decided how to commercialize our product candidates in those markets. We may decide to build our own sales force or sell our products through third parties. If we decide to sell our product candidates in international markets through a third party, we may not be able to enter into any marketing arrangements on favorable terms or at all. In addition, these arrangements could result in lower levels of income to us than if we marketed our product candidates entirely on our own. If we are unable to enter into a marketing arrangement for our product candidates in international markets, we may not be able to develop an effective international sales force to successfully commercialize those products in international markets. If we fail to enter into marketing arrangements for our products and are unable to develop an effective international sales force, our ability to generate revenue would be limited.

***Even if we receive regulatory approval for any of our product candidates, we will be subject to ongoing obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.***

Any regulatory approvals that we receive for our product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase IV clinical trials, and surveillance to monitor the safety and efficacy of the product candidate. In addition, if the FDA or a comparable foreign regulatory authority approves any of our product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMPs and cGCPs for any clinical trials that we conduct post-approval. The future discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market, or voluntary or mandatory product recalls;

fines, warning letters or holds on clinical trials;

refusal by the FDA to approve pending applications or supplements to approved applications filed by us, or suspension or revocation of product license approvals;

product seizure or detention, or refusal to permit the import or export of products; and

injunctions or the imposition of civil or criminal penalties.

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



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***We will need to obtain FDA approval of any proposed product brand names, and any failure or delay associated with such approval may adversely impact our business.***

A pharmaceutical product cannot be marketed in the United States or other countries until we have completed rigorous and extensive regulatory review processes, including approval of a brand name. Any brand names we intend to use for our product candidates will require approval from the FDA regardless of whether we have secured a formal trademark registration from the U.S. Patent and Trademark Office, or the PTO. The FDA typically conducts a review of proposed product brand names, including an evaluation of potential for confusion with other product names. The FDA may also object to a product brand name if we believe the name inappropriately implies medical claims. If the FDA objects to any of our proposed product brand names, we may be required to adopt an alternative brand name for our product candidates. If we adopt an alternative brand name, we would lose the benefit of our existing trademark applications for such product candidate and may be required to expend significant additional resources in an effort to identify a suitable product brand name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. We may be unable to build a successful brand identity for a new trademark in a timely manner or at all, which would limit our ability to commercialize our product candidates.

***Our failure to successfully discover, acquire, develop and market additional product candidates or approved products would impair our ability to grow.***

As part of our growth strategy, we intend to develop and market additional products and product candidates. We are pursuing various therapeutic opportunities through our pipeline. We may spend several years completing our development of any particular current or future internal product candidate, and failure can occur at any stage. The product candidates to which we allocate our resources may not end up being successful. In addition, because our internal research capabilities are limited, we may be dependent upon pharmaceutical and biotechnology companies, academic scientists and other researchers to sell or license products or technology to us. The success of this strategy depends partly upon our ability to identify, select, discover and acquire promising pharmaceutical product candidates and products. Failure of this strategy would impair our ability to grow.

The process of proposing, negotiating and implementing a license or acquisition of a product candidate or approved product is lengthy and complex. Other companies, including some with substantially greater financial, marketing and sales resources, may compete with us for the license or acquisition of product candidates and approved products. We have limited resources to identify and execute the acquisition or in-licensing of third-party products, businesses and technologies and integrate them into our current infrastructure. Moreover, we may devote resources to potential acquisitions or in-licensing opportunities that are never completed, or we may fail to realize the anticipated benefits of such efforts. We may not be able to acquire the rights to additional product candidates on terms that we find acceptable, or at all.

In addition, future acquisitions may entail numerous operational and financial risks, including:

disruption of our business and diversion of our management's time and attention to develop acquired products or technologies;

incurrence of substantial debt, dilutive issuances of securities or depletion of cash to pay for acquisitions;

higher than expected acquisition and integration costs;

difficulty in combining the operations and personnel of any acquired businesses with our operations and personnel;

increased amortization expenses;

impairment of relationships with key suppliers or customers of any acquired businesses due to changes in management and ownership;



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inability to motivate key employees of any acquired businesses; and

assumption of known and unknown liabilities.

Further, any product candidate that we acquire may require additional development efforts prior to commercial sale, including extensive clinical testing and approval by the FDA and applicable foreign regulatory authorities. All product candidates are prone to risks of failure typical of pharmaceutical product development, including the possibility that a product candidate will not be shown to be sufficiently safe and effective for approval by regulatory authorities.

***Our commercial success depends upon us attaining significant market acceptance of our product candidates, if approved for sale, among physicians, patients, healthcare payors and major operators of cancer and other clinics.***

Even if we obtain regulatory approval for our product candidates, the product may not gain market acceptance among physicians, health care payors, patients and the medical community, which are critical to commercial success. Market acceptance of any product candidate for which we receive approval depends on a number of factors, including:

the efficacy and safety as demonstrated in clinical trials;

the timing of market introduction of such product candidate as well as competitive products;

the clinical indications for which the drug is approved;

acceptance by physicians, major operators of cancer clinics and patients of the drug as a safe and effective treatment;

the safety of such product candidate seen in a broader patient group, including its use outside the approved indications;

the availability, cost and potential advantages of alternative treatments, including less expensive generic drugs;

the availability of adequate reimbursement and pricing by third-party payors and government authorities;

the relative convenience and ease of administration of Cynviloq for clinical practices;

the product labeling or product insert required by the FDA or regulatory authority in other countries;

the approval, availability, market acceptance and reimbursement for a companion diagnostic, if any;

the prevalence and severity of adverse side effects; and

the effectiveness of our sales and marketing efforts.

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If any product candidate that we develop does not provide a treatment regimen that is as beneficial as, or is perceived as being as beneficial as, the current standard of care or otherwise does not provide patient benefit, that product candidate, if approved for commercial sale by the FDA or other regulatory authorities, likely will not achieve market acceptance. Our ability to effectively promote and sell any approved products will also depend on pricing and cost-effectiveness, including our ability to produce a product at a competitive price and our ability to obtain sufficient third-party coverage or reimbursement. If any product candidate is approved but does not achieve an adequate level of acceptance by physicians, patients and third-party payors, our ability to generate revenues from that product would be substantially reduced. In addition, our efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources, may be constrained by FDA rules and policies on product promotion, and may never be successful.

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*If we fail to develop Cynviloq for additional indications, our commercial opportunity will be limited.*

To date, our initial focus has been on the development of Cynviloq for the treatment of MBC and NSCLC. A key element of our strategy is to pursue clinical development of Cynviloq for bladder cancer and ovarian cancer, and potentially for other indications. Although we believe there is large commercial opportunity for the treatment of MBC and NSCLC alone, our ability to generate and grow revenues will be highly dependent on our ability to successfully develop and commercialize Cynviloq for the treatment of additional indications. The development of Cynviloq for additional indications is prone to the risks of failure inherent in drug development and we cannot provide you any assurance that we will be able to successfully advance any of these programs through the development process. Even if we receive FDA approval to market Cynviloq for the treatment of any additional indications, we cannot assure you that any such indications will be successfully commercialized, widely accepted in the marketplace or more effective than other commercially available alternatives. If we are unable to successfully develop and commercialize Cynviloq for additional indications, our commercial opportunity will be limited and our business prospects will suffer.

*If we cannot compete successfully against other biotechnology and pharmaceutical companies, we may not be successful in developing and commercializing our technology and our business will suffer.*

The biotechnology and pharmaceutical industries are characterized by intense competition and rapid technological advances, both in the United States and internationally. In addition, the competition in the oncology market is intense. For example, our late-stage product candidate, Cynviloq, may compete directly with a marketed product, Abraxane<sup>®</sup>, for certain cancer indications. Abraxane<sup>®</sup> is already approved for MBC and NSCLC and approvals are being pursued for Pancreatic and Melanoma cancers. Even if we are able to develop our proprietary platform technology and additional antibody libraries, each will compete with a number of existing and future technologies and product candidates developed, manufactured and marketed by others. Specifically, we will compete against fully integrated pharmaceutical companies and smaller companies that are collaborating with larger pharmaceutical companies, academic institutions, government agencies and other public and private research organizations. Many of these competitors have validated technologies with products already FDA-approved or in various stages of development. In addition, many of these competitors, either alone or together with their collaborative partners, operate larger research and development programs and have substantially greater financial resources than we do, as well as significantly greater experience in:

developing product candidates and technologies generally;

undertaking preclinical testing and clinical trials;

obtaining FDA and other regulatory approvals of product candidates;

formulating and manufacturing product candidates; and

launching, marketing and selling product candidates.

Many of our competitors have substantially greater financial, technical and other resources, such as larger research and development staff and experienced marketing and manufacturing organizations. Additional mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in our competitors. As a result, these companies may obtain regulatory approval more rapidly than we are able and may be more effective in selling and marketing their products as well. Smaller or early-stage companies or generic pharmaceutical manufacturers may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors may succeed in developing, acquiring or licensing on an exclusive basis drug products that are more effective or less costly than any drug candidate that we are currently developing or that we may develop. If approved, our product candidates will face competition from commercially available drugs as well as drugs that are in the development pipelines of our competitors and later enter the market.

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Established pharmaceutical companies may invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make our product candidates less competitive. In addition, any new product that competes with an approved product must demonstrate compelling advantages in efficacy, convenience, tolerability and safety in order to overcome price competition and to be commercially successful. Accordingly, our competitors may succeed in obtaining patent protection, receiving FDA, EMA or other regulatory approval or discovering, developing and commercializing medicines before we do, which would have a material adverse impact on our business. If our technologies fail to compete effectively against third party technologies, our business will be adversely impacted.

We expect that our ability to compete effectively will depend upon our ability to:

successfully and rapidly complete clinical trials and submit for and obtain all requisite regulatory approvals in a cost-effective manner;

maintain a proprietary position for our products and manufacturing processes and other related product technology;

attract and retain key personnel;

develop relationships with physicians prescribing these products; and

build an adequate sales and marketing infrastructure for our product candidates.

Because we will be competing against significantly larger companies with established track records, we will have to demonstrate that, based on experience, clinical data, side-effect profiles and other factors, our products, if approved, are competitive with other products.

***If approved, Cynviloq will face competition from less expensive generic products of competitors and, if we are unable to differentiate the benefits of Cynviloq over these less expensive alternatives, we may never generate meaningful product revenues.***

Generic paclitaxel therapies are typically sold at lower prices than branded paclitaxel therapies and are generally preferred by hospital formularies and managed care providers of health services. We anticipate that, if approved, Cynviloq will face increasing competition in the form of generic versions of branded products of competitors that have lost or will lose their patent exclusivity. For example, Cynviloq, if approved, will initially face competition from the less expensive generic forms of paclitaxel that are currently available such as Taxol<sup>®</sup>, and, in the future, would face additional competition from a generic form of Abraxane<sup>®</sup> when the patents covering it begin to expire in approximately 2022, or earlier if the patents are successfully challenged. If we are unable to demonstrate to physicians and payers that the key differentiating features of Cynviloq translate to overall clinical benefit or lower cost of care, we may not be able to compete with generic alternatives.

***Reimbursement may be limited or unavailable in certain market segments for our product candidates, which could make it difficult for us to sell our products profitably.***

There is significant uncertainty related to the third-party coverage and reimbursement of newly approved drugs. We intend to seek approval to market our product candidates in the United States, Europe and other selected foreign jurisdictions. Market acceptance and sales of our product candidates in both domestic and international markets will depend significantly on the availability of adequate coverage and reimbursement from third-party payors for any of our product candidates and may be affected by existing and future health care reform measures. Government and other third-party payors are increasingly attempting to contain healthcare costs by limiting both coverage and the level of reimbursement for new drugs and, as a result, they may not cover or provide adequate payment for our product candidates. These payors may conclude that our product candidates are less safe, less effective or less cost-effective than existing or future introduced products, and third-party payors may not approve our product candidates for coverage and reimbursement or may cease providing coverage and reimbursement for these product candidates.



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Obtaining coverage and reimbursement approval for a product from a government or other third-party payor is a time consuming and costly process that could require us to provide to the payor supporting scientific, clinical and cost-effectiveness data for the use of our products. We may not be able to provide data sufficient to gain acceptance with respect to coverage and reimbursement. If reimbursement of our future products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, we may be unable to achieve or sustain profitability.

In some foreign countries, particularly in the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product candidate. To obtain reimbursement or pricing approval in some countries, we may be required to conduct additional clinical trials that compare the cost-effectiveness of our product candidates to other available therapies. If reimbursement of our product candidates is unavailable or limited in scope or amount in a particular country, or if pricing is set at unsatisfactory levels, we may be unable to achieve or sustain profitability of our products in such country.

### ***Healthcare reform measures could hinder or prevent our product candidates' commercial success.***

In both the United States and certain foreign jurisdictions, there have been and we expect there will continue to be a number of legislative and regulatory changes to the health care system that could impact our ability to sell our products profitably. The United States government and other governments have shown significant interest in pursuing healthcare reform. In particular, the Medicare Modernization Act of 2003 revised the payment methodology for many products under the Medicare program in the United States. This has resulted in lower rates of reimbursement. In 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively, the Healthcare Reform Law, was enacted. The Healthcare Reform Law substantially changes the way healthcare is financed by both governmental and private insurers. Such government-adopted reform measures may adversely impact the pricing of healthcare products and services in the United States or internationally and the amount of reimbursement available from governmental agencies or other third-party payors.

There have been, and likely will continue to be, legislative and regulatory proposals at the federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare may adversely affect the demand for any drug products for which we may obtain regulatory approval, as well as our ability to set satisfactory prices for our products, to generate revenues, and to achieve and maintain profitability.

### ***Certain of our potential product candidates are in early stages of development and any product candidates that we develop will require extensive preclinical and clinical testing before they are approved by the appropriate regulatory agency, if at all.***

The FDA regulates, among other things, the development, testing, manufacture, safety, efficacy, record-keeping, labeling, storage, approval, advertising, promotion, sale and distribution of biopharmaceutical products. We are in the early stages of developing potential product candidates, and any candidates that we develop will require extensive preclinical and clinical testing before they will be approved by the FDA or another regulatory authority in a jurisdiction outside the United States, if at all. We have not yet developed any product candidate; if we were to do so there are a number of requirements that we would be required to satisfy in order to begin conducting preclinical trials and there can be no assurance that we will develop product candidates or complete the steps necessary to allow us to commence these trials. We cannot predict with any certainty the results of preclinical testing or whether such trials would yield sufficient data to permit us, or those with whom we collaborate, to proceed with clinical development and ultimately submit an application for regulatory approval of our product candidates in the United States or abroad, or whether such applications would be approved by the

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appropriate regulatory agency. Further, our product candidates may not receive regulatory approval even if they are successful in clinical trials. If we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations.

### ***Failure to successfully validate, develop and obtain regulatory approval for companion diagnostics could harm our long-term drug development strategy.***

As one of the key elements of our clinical development strategy, we seek to identify patients within a disease category or indication who may derive selective and meaningful benefit from the product candidates we are developing. In collaboration with partners, we plan to develop companion diagnostics to help us to more accurately identify patients within a particular category or indication, both during our clinical trials and in connection with the commercialization of certain of our product candidates. Companion diagnostics are subject to regulation by the FDA and comparable foreign regulatory authorities as medical devices and require separate regulatory approval prior to commercialization. We do not develop companion diagnostics internally and thus we are dependent on the sustained cooperation and effort of our third-party collaborators in developing and obtaining approval for these companion diagnostics. We and our collaborators may encounter difficulties in developing and obtaining approval for the companion diagnostics, including issues relating to selectivity/specificity, analytical validation, reproducibility, or clinical validation. Any delay or failure by our collaborators to develop or obtain regulatory approval of the companion diagnostics could delay or prevent approval of our product candidates. In addition, our collaborators may encounter production difficulties that could constrain the supply of the companion diagnostics, and both they and we may have difficulties gaining acceptance of the use of the companion diagnostics in the clinical community. If such companion diagnostics fail to gain market acceptance, it would have an adverse effect on our ability to derive revenues from sales of our products. In addition, the diagnostic company with whom we contract may decide to discontinue selling or manufacturing the companion diagnostic that we anticipate using in connection with development and commercialization of our product candidates or our relationship with such diagnostic company may otherwise terminate. We may not be able to enter into arrangements with another diagnostic company to obtain supplies of an alternative diagnostic test for use in connection with the development and commercialization of our product candidates or do so on commercially reasonable terms, which could adversely affect and/or delay the development or commercialization of our product candidates.

### ***Our product development efforts may not be successful.***

Our product development efforts for our FIC therapeutic antibodies, ADC, AfDC and rIVIG technologies are designed to focus on novel therapeutic approaches and technologies that have not been widely studied. We are applying these approaches and technologies in our attempt to discover new treatments for conditions that are also the subject of research and development efforts of many other companies. These approaches and technologies may never be successful.

### ***Our failure to find third party collaborators to assist or share in the costs of product development could materially harm our business, financial condition and results of operations.***

Our strategy for the development and commercialization of our proprietary product candidates may include the formation of collaborative arrangements with third parties. Potential third parties include biopharmaceutical, pharmaceutical and biotechnology companies, academic institutions and other entities. Third-party collaborators may assist us in:

funding research, preclinical development, clinical trials and manufacturing;

seeking and obtaining regulatory approvals; and

successfully commercializing any future product candidates.

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If we are not able to establish further collaboration agreements, we may be required to undertake product development and commercialization at our own expense. Such an undertaking may limit the number of product candidates that we will be able to develop, significantly increase our capital requirements and place additional strain on our internal resources. Our failure to enter into additional collaborations could materially harm our business, financial condition and results of operations.

In addition, our dependence on licensing, collaboration and other agreements with third parties may subject us to a number of risks. These agreements may not be on terms that prove favorable to us and may require us to relinquish certain rights in our product candidates. To the extent we agree to work exclusively with one collaborator in a given area, our opportunities to collaborate with other entities could be curtailed. Lengthy negotiations with potential new collaborators may lead to delays in the research, development or commercialization of product candidates. The decision by our collaborators to pursue alternative technologies or the failure of our collaborators to develop or commercialize successfully any product candidate to which they have obtained rights from us could materially harm our business, financial condition and results of operations.

### ***Adverse economic conditions may have material adverse consequences on our business, results of operations and financial condition.***

Unpredictable and unstable changes in economic conditions, including recession, inflation, increased government intervention, or other changes, may adversely affect our general business strategy. We rely upon our ability to generate additional sources of liquidity and we may need to raise additional funds through public or private debt or equity financings in order to fund existing operations or to take advantage of opportunities, including acquisitions of complementary businesses or technologies. Any adverse event would have a material adverse impact on our business, results of operations and financial condition.

### ***Occasionally, we expect to rely on third parties to gain access to certain antigens.***

We expect to gain access to certain antigens through contractual arrangements with leading academic researchers, through companies involved in supplying antigens, by isolating them ourselves, or from publicly available sources. In the event we are unable to access antigens in sufficient quantities, or at all, we may not be able to perform antibody discovery activities for certain antigens, which may have an adverse impact on our business and financial condition.

### ***Because our development activities are expected to rely heavily on sensitive and personal information, an area which is highly regulated by privacy laws, we may not be able to generate, maintain or access essential patient samples or data to continue our research and development efforts in the future on reasonable terms and conditions, which may adversely affect our business.***

We may have access to very sensitive data regarding patients whose tissue samples are used in our studies. This data will contain information that is personal in nature. The maintenance of this data is subject to certain privacy-related laws, which impose upon us administrative and financial burdens, and litigation risks. For instance, the rules promulgated by the Department of Health and Human Services under the Health Insurance Portability and Accountability Act, or HIPAA, create national standards to protect patients' medical records and other personal information in the United States. These rules require that healthcare providers and other covered entities obtain written authorizations from patients prior to disclosing protected health care information of the patient to companies. If the patient fails to execute an authorization or the authorization fails to contain all required provisions, then we will not be allowed access to the patient's information and our research efforts can be substantially delayed. Furthermore, use of protected health information that is provided to us pursuant to a valid patient authorization is subject to the limits set forth in the authorization (i.e., for use in research and in submissions to regulatory authorities for product approvals). As such, we are required to implement policies, procedures and reasonable and appropriate security measures to protect individually identifiable health information we receive from covered entities, and to ensure such information is used only as authorized by the patient. Any violations of these rules by us could subject us to civil and criminal penalties and adverse publicity,

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and could harm our ability to initiate and complete clinical studies required to support regulatory applications for our proposed products. In addition, HIPAA does not replace federal, state, or other laws that may grant individuals even greater privacy protections. We can provide no assurance that future legislation will not prevent us from generating or maintaining personal data or that patients will consent to the use of their personal information, either of which may prevent us from undertaking or publishing essential research. These burdens or risks may prove too great for us to reasonably bear, and may adversely affect our ability to achieve profitability or maintain profitably in the future.

***Our therapeutic product candidates for which we intend to seek approval as biological products may face competition sooner than expected.***

With the enactment of the Biologics Price Competition and Innovation Act of 2009, or BPCIA, as part of the Health Care Reform Law, an abbreviated pathway for the approval of biosimilar and interchangeable biological products was created. The new abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as interchangeable. The FDA defines an interchangeable biosimilar as a product that, in terms of safety or diminished efficacy, presents no greater risk when switching between the biosimilar and its reference product than the risk of using the reference product alone. Under the BPCIA, an application for a biosimilar product cannot be submitted to the FDA until four years, or approved by the FDA until 12 years, after the original brand product identified as the reference product was approved under a BLA. The new law is complex and is only beginning to be interpreted by the FDA. As a result, its ultimate impact, implementation and meaning are subject to uncertainty. While it is uncertain when any such processes may be fully adopted by the FDA, any such processes could have a material adverse effect on the future commercial prospects for our biological products.

We believe that if any of our product candidates were to be approved as biological products under a BLA, such approved products should qualify for the 12-year period of exclusivity. However, there is a risk that the United States Congress could amend the BPCIA to significantly shorten this exclusivity period as proposed by President Obama, potentially creating the opportunity for generic competition sooner than anticipated. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing. In addition, a competitor could decide to forego the biosimilar route and submit a full BLA after completing its own preclinical studies and clinical trials. In such cases, any exclusivity to which we may be eligible under the BPCIA would not prevent the competitor from marketing its product as soon as it is approved.

***We may be exposed to liability claims associated with the use of hazardous materials and chemicals.***

Our research and development activities may involve the controlled use of hazardous materials and chemicals. Although we believe that our safety procedures for using, storing, handling and disposing of these materials comply with federal, state and local laws and regulations, we cannot completely eliminate the risk of accidental injury or contamination from these materials. In the event of such an accident, we could be held liable for any resulting damages and any liability could materially adversely affect our business, financial condition and results of operations. We do not currently maintain hazardous materials insurance coverage. In addition, the federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of hazardous or radioactive materials and waste products may require us to incur substantial compliance costs that could materially harm our business.

***If we are unable to retain and recruit qualified scientists and advisors, or if any of our key executives, key employees or key consultants discontinues his or her employment or consulting relationship with us, it may delay our development efforts or otherwise harm our business.***

We may not be able to attract or retain qualified management and scientific and clinical personnel in the future due to the intense competition for qualified personnel among biotechnology, pharmaceutical and other

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businesses, particularly in the San Diego, California area. Our industry has experienced a high rate of turnover of management personnel in recent years. If we are not able to attract, retain and motivate necessary personnel to accomplish our business objectives, we may experience constraints that will significantly impede the successful development of any product candidates, our ability to raise additional capital and our ability to implement our overall business strategy.

We are highly dependent on key members of our management and scientific staff, especially Henry Ji, Ph.D, our Chief Executive Officer and President, Vuong Trieu, Ph.D., our Chief Scientific Officer, George Uy, our Chief Commercial Officer and Richard Vincent, our Chief Financial Officer. Our success also depends on our ability to continue to attract, retain and motivate highly skilled junior, mid-level, and senior managers as well as junior, mid-level, and senior scientific and medical personnel. The loss of any of our executive officers, key employees or key consultants and our inability to find suitable replacements could impede the achievement of our research and development objectives, potentially harm our business, financial condition and prospects. Furthermore, recruiting and retaining qualified scientific personnel to perform research and development work in the future is critical to our success. We may be unable to attract and retain personnel on acceptable terms given the competition among biotechnology, biopharmaceutical and health care companies, universities and non-profit research institutions for experienced scientists. Certain of our current officers, directors, scientific advisors and/or consultants or certain of the officers, directors, scientific advisors and/or consultants hereafter appointed may from time to time serve as officers, directors, scientific advisors and/or consultants of other biopharmaceutical or biotechnology companies. We do not maintain key man insurance policies on any of our officers or employees. All of our employees are employed at will and, therefore, each employee may leave our employment at any time.

We may not be able to attract or retain qualified management and scientific personnel in the future due to the intense competition for a limited number of qualified personnel among biopharmaceutical, biotechnology, pharmaceutical and other businesses. Many of the other pharmaceutical companies that we compete against for qualified personnel have greater financial and other resources, different risk profiles and a longer history in the industry than we do. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high quality candidates than what we have to offer. If we are unable to continue to attract and retain high quality personnel, the rate and success at which we can develop and commercialize product candidates will be limited.

We plan to grant stock options or other forms of equity awards in the future as a method of attracting and retaining employees, motivating performance and aligning the interests of employees with those of our stockholders. If we are unable to implement and maintain equity compensation arrangements that provide sufficient incentives, we may be unable to retain our existing employees and attract additional qualified candidates. If we are unable to retain our existing employees, including qualified scientific personnel, and attract additional qualified candidates, our business and results of operations could be adversely affected.

***Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could have a material adverse effect on our business.***

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with FDA regulations, provide accurate information to the FDA, comply with manufacturing standards we have established, comply with federal and state health-care fraud and abuse laws and regulations, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. We have adopted a Code of Business Conduct and Ethics, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent

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this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of significant fines or other sanctions.

***We may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.***

If we obtain FDA approval for any of our product candidates and begin commercializing those products in the United States, our operations may be directly, or indirectly through our customers, subject to various federal and state fraud and abuse laws, including, without limitation, the federal Anti-Kickback Statute and the federal False Claims Act. These laws may impact, among other things, our proposed sales, marketing and education programs. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;

federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payers that are false or fraudulent;

the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program and making false statements relating to healthcare matters;

HIPAA, as amended by the Health Information Technology and Clinical Health Act, or HITECH, and its implementing regulations, which imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information; and

state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payer, including commercial insurers, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

***If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of our product candidates.***

We face an inherent risk of product liability as a result of the clinical testing of our product candidates and will face an even greater risk if we commercialize any products. For example, we may be sued if any product we develop allegedly causes injury or is found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability, and a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend

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ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our product candidates, if approved. Even successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

decreased demand for our product candidates or products that we may develop;

injury to our reputation;

withdrawal of clinical trial participants;

initiation of investigations by regulators;

costs to defend the related litigation;

a diversion of management's time and our resources;

substantial monetary awards to trial participants or patients;

product recalls, withdrawals or labeling, marketing or promotional restrictions;

loss of revenues from product sales; and

the inability to commercialize our product candidates.

Our inability to obtain and retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of products we develop.

***We will need to increase the size of our company and may not effectively manage our growth.***

Our success will depend upon growing our business and our employee base. Over the next 12 months, we plan to add additional employees to assist us with research and development. Our future growth, if any, may cause a significant strain on our management, and our operational, financial and other resources. Our ability to manage our growth effectively will require us to implement and improve our operational, financial and management systems and to expand, train, manage and motivate our employees. These demands may require the hiring of additional management personnel and the development of additional expertise by management. Any increase in resources devoted to research and product development without a corresponding increase in our operational, financial and management systems could have a material adverse effect on our business, financial condition, and results of operations.

***Any disruption in our research and development facilities could adversely affect our business, financial condition and results of operations.***

Our principal executive offices, which house our research and development programs, are located in San Diego, California. Our facilities may be affected by natural or man-made disasters. Earthquakes are of particular significance since our facilities are located in an earthquake-prone area. We are also vulnerable to damage from other types of disasters, including power loss, attacks from extremist organizations, fire, floods and similar events. In the event that our facilities were affected by a natural or man-made disaster, we may be forced to curtail our operations and/or

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rely on third-parties to perform some or all of our research and development activities. Although we believe we possess adequate insurance for damage to our property and the disruption of our business from casualties, such insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all. In the future, we may choose to expand our operations in either our existing facilities or in new facilities. If we expand our worldwide manufacturing locations, there can be no assurance that this expansion will occur without implementation difficulties, or at all.

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***International operations may expose us to foreign currency exchange rate fluctuations for all foreign currencies in which we do business and we may be materially adversely affected by these fluctuations.***

We formed Sorrento Hong Kong effective December 4, 2012. Sorrento Hong Kong had no operations in 2012. In the event Sorrento Hong Kong becomes operational, we may have an international subsidiary that operates in a foreign currency which would expose us to foreign currency exchange rate fluctuations. We intend to hedge any foreign currency risks associated with potential transactions by entering into forward contracts. Although we may enter into such forward contracts, they may not be adequate to eliminate the risk of foreign currency exchange rate exposures. International operations may also expose us to currency fluctuations as we translate the financial statements of our international subsidiary to U.S. Dollars.

***Our business and operations would suffer in the event of system failures.***

Despite the implementation of security measures, our internal computer systems and those of our CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our drug development programs. For example, the loss of clinical trial data from completed or ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach was to result in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development of our product candidates could be delayed.

***If we acquire companies or technologies in the future, they could prove difficult to integrate, disrupt our business, dilute stockholder value, and adversely affect our operating results and the value of our common stock.***

As part of our business strategy, we may acquire, enter into joint ventures with, or make investments in complementary or synergistic companies, services, and technologies in the future. Acquisitions and investments involve numerous risks, including:

difficulties in identifying and acquiring products, technologies, or businesses that will help our business;

difficulties in integrating operations, technologies, services, and personnel;

diversion of financial and managerial resources from existing operations;

the risk of entering new development activities and markets in which we have little to no experience;

risks related to the assumption of known and unknown liabilities; and

risks related to our ability to raise sufficient capital to fund additional operating activities.

As a result, if we fail to properly evaluate acquisitions or investments, we may not achieve the anticipated benefits of any such acquisitions, we may incur costs in excess of what we anticipate, and management resources and attention may be diverted from other necessary or valuable activities.

***The terms of our secured debt facility require us to meet certain operating and financial covenants and place restrictions on our operating and financial flexibility. If we raise additional capital through debt financing, the terms of any new debt could further restrict our ability to operate our business.***

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We have a \$5.0 million loan and security agreement with Oxford Finance LLC and Silicon Valley Bank that is secured by a lien covering substantially all of our assets, excluding intellectual property. As of September 30, 2013, the outstanding principal balance of the Oxford Finance LLC and Silicon Valley Bank loan was \$5.0 million. The loan agreement contains customary affirmative and negative covenants and events of default. The

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affirmative covenants include, among others, covenants requiring us to maintain our legal existence and governmental approvals, deliver certain financial reports and maintain insurance coverage. The negative covenants include, among others, restrictions on transferring collateral, changing our business, incurring additional indebtedness, engaging in mergers or acquisitions, paying dividends or making other distributions, making investments and creating other liens on our assets, in each case subject to customary exceptions. If we default under the loan agreement, the lenders may accelerate all of our repayment obligations and take control of our pledged assets, potentially requiring us to renegotiate our agreement on terms less favorable to us or to immediately cease operations. Further, if we are liquidated, the lender's right to repayment would be senior to the rights of the holders of our common stock to receive any proceeds from the liquidation. The lenders could declare a default upon the occurrence of any event that they interpret as a material adverse change as defined under the loan agreement, thereby requiring us to repay the loan immediately or to attempt to reverse the declaration of default through negotiation or litigation. Any declaration by the lenders of an event of default could significantly harm our business and prospects and could cause the price of our common stock to decline. If we raise any additional debt financing, the terms of such additional debt could further restrict our operating and financial flexibility.

### **Risks Related to the Acquisition of IgDraSol**

#### ***We may fail to realize the anticipated benefits of the acquisition of IgDraSol and IgDraSol Transactions.***

The success of the acquisition of IgDraSol and IgDraSol Transactions will depend on, among other things, our ability to combine our business with IgDraSol in a manner that does not materially disrupt existing relationships and that allows us to achieve development and operational synergies. If we are unable to achieve these objectives, the anticipated benefits of the acquisition may not be realized fully or at all or may take longer to realize than expected. In particular, the acquisition may not be accretive to our stock value or development pipeline in the near or long term.

It is possible that the integration process could result in the loss of key employees; the disruption of our ongoing business or the ongoing business of IgDraSol; or inconsistencies in standards, controls, procedures, or policies that could adversely affect our ability to maintain relationships with third parties and employees or to achieve the anticipated benefits of the acquisition. Integration efforts between the two companies will also divert management's attention from our core business and other opportunities that could have been beneficial to our shareholders. An inability to realize the full extent of, or any of, the anticipated benefits of the acquisition, as well as any delays encountered in the integration process, could have an adverse effect on our business and results of operations, which may affect the value of the shares of our common stock after the completion of the acquisition. If we are unable to achieve these objectives, the anticipated benefits of the acquisition may not be realized fully or at all or may take longer to realize than expected. In particular, the acquisition may not be accretive to our stock value or development pipeline in the near or long term.

#### ***We expect to incur significant additional costs in connection with the acquisition of IgDraSol and the IgDraSol Transactions and integrating the companies into a single business.***

During the first half of 2013, we incurred significant legal and professional fees in connection with the IgDraSol acquisition. We expect to incur additional costs integrating the companies' operations, higher development and regulatory costs, and personnel, which cannot be estimated accurately at this time. If the total costs of the integration of the two companies and advancement of the Cynviloq assets exceed the anticipated benefits of the acquisition, our financial results could be adversely affected.

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

*Our ability to protect our intellectual property rights will be critically important to the success of our business, and we may not be able to protect these rights in the United States or abroad.*

Our success, competitive position and future revenues will depend in part on our ability to obtain and maintain patent protection for our product candidates, methods, processes and other technologies, to prevent third parties from infringing on our proprietary rights and to operate without infringing upon the proprietary rights of third parties. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our proprietary rights are covered by valid and enforceable patents or are effectively maintained as trade secrets. We attempt to protect our proprietary position by maintaining trade secrets and by filing U.S. and foreign patent applications related to our proprietary technology, inventions and improvements that are important to the development of our business. We have one issued U.S. patent covering our G-MAB<sup>®</sup> which expires in 2022 and the examination of its European equivalent is currently in progress. In 2011, several improvement patent applications were filed for our proprietary antibody library technology. However, due to the difficulties of enforcing such antibody library technology, we filed a key patent application in the U.S. only and requested nonpublication. We have commenced generating a patent application portfolio of patents to protect each product candidate in our pipeline. However, the patent position of biopharmaceutical companies involves complex legal and factual questions, and therefore we cannot predict with certainty whether any patent applications that we have filed or that we may file in the future will be approved or any resulting patents will be enforced. In addition, third parties may challenge, seek to invalidate or circumvent any of our patents, once they are issued. Thus, any patents that we own or license from third parties may not provide any protection against competitors. Any patent applications that we have filed or that we may file in the future, or those we may license from third parties, may not result in patents being issued. Also, patent rights may not provide us with adequate proprietary protection or competitive advantages against competitors with similar technologies. In 2012, one issued patent for a formulation of highly insoluble drugs related to Tocosol<sup>®</sup> expired for failure to pay maintenance fees.

Third party competitors may seek to challenge the validity of our patents, thereby rendering them unenforceable or we may seek to challenge third party competitor patents if such third parties seek to interpret or enforce a claim scope going well beyond the actual enabled invention.

In addition, the laws of certain foreign countries do not protect our intellectual property rights to the same extent as do the laws of the United States. If we fail to apply for intellectual property protection or if we cannot adequately protect our intellectual property rights in these foreign countries, our competitors may be able to compete more effectively against us, which could adversely affect our competitive position, as well as our business, financial condition and results of operations.

*If any of our trade secrets, know-how or other proprietary information is disclosed, the value of our trade secrets, know-how and other proprietary rights would be significantly impaired and our business and competitive position would suffer.*

Our success also depends upon the skills, knowledge and experience of our scientific and technical personnel and our consultants and advisors, as well as our licensors. To help protect our proprietary know-how and our inventions for which patents may be unobtainable or difficult to obtain, we rely on trade secret protection and confidentiality agreements. Unlike some of our competitors, we maintain our proprietary libraries for ourselves as we believe they have proven to be superior in obtaining strong binder product candidates. To this end, we require all of our employees, consultants, advisors and contractors to enter into agreements which prohibit the disclosure of confidential information and, where applicable, require disclosure and assignment to us of the ideas, developments, discoveries and inventions important to our business. These agreements may not provide adequate protection for our trade secrets, know-how or other proprietary information in the event of any unauthorized use or disclosure or the lawful development by others of such information. If any of our trade secrets, know-how or other proprietary information is disclosed, the value of our trade secrets, know-how and other proprietary rights would be significantly impaired and our business and competitive position would suffer.

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***Claims that we infringe upon the rights of third parties may give rise to costly and lengthy litigation, and we could be prevented from selling products, forced to pay damages, and defend against litigation.***

Third parties may assert patent or other intellectual property infringement claims against us or our strategic partners or licensees with respect to our technologies and potential product candidates. If our products, methods, processes and other technologies infringe upon the proprietary rights of other parties, we could incur substantial costs and we may have to:

obtain licenses, which may not be available on commercially reasonable terms, if at all, and may be non-exclusive, thereby giving our competitors access to the same intellectual property licensed to us;

redesign our products or processes to avoid infringement;

stop using the subject matter validly claimed in the patents held by others;

pay damages; and

defend litigation or administrative proceedings which may be costly whether we win or lose, and which could result in a substantial diversion of our valuable management resources.

Even if we were to prevail, any litigation could be costly and time-consuming and would divert the attention of our management and key personnel from our business operations. Furthermore, as a result of a patent infringement suit brought against us or our strategic partners or licensees, we or our strategic partners or licensees may be forced to stop or delay developing, manufacturing or selling technologies or potential products that are claimed to infringe a third party's intellectual property unless that party grants us or our strategic partners or licensees rights to use its intellectual property. Ultimately, we may be unable to develop some of our technologies or potential products or may have to discontinue development of a product candidate or cease some of our business operations as a result of patent infringement claims, which could severely harm our business.

***Our position as a relatively small company may cause us to be at a significant disadvantage in defending our intellectual property rights and in defending against infringement claims by third parties.***

Litigation relating to the ownership and use of intellectual property is expensive, and our position as a relatively small company in an industry dominated by very large companies may cause us to be at a significant disadvantage in defending our intellectual property rights and in defending against claims that our technology infringes or misappropriates third party intellectual property rights. However, we may seek to use various post-grant administrative proceedings, including new procedures created under the America Invents Act, to invalidate potentially overly-broad third party rights. Even if we are able to defend our position, the cost of doing so may adversely affect our ability to grow, generate revenue or become profitable. Although we have not yet experienced patent litigation, we may in the future be subject to such litigation and may not be able to protect our intellectual property at a reasonable cost, or at all, if such litigation is initiated. The outcome of litigation is always uncertain, and in some cases could include judgments against us that require us to pay damages, enjoin us from certain activities or otherwise affect our legal or contractual rights, which could have a significant adverse effect on our business.

***Third-party claims of intellectual property infringement may prevent or delay our drug discovery and development efforts.***

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including Patent Office administrative proceedings, such as inter parties reviews, and reexamination proceedings before the U.S. PTO or oppositions and revocations and other comparable proceedings in foreign jurisdictions. Numerous United States and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others.



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Despite safe harbor provisions, third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents, of which we are currently unaware, with claims to materials, formulations, methods of doing research or library screening, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent published applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of any of our product candidates, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block our ability to commercialize such product candidate unless we obtain a license under the applicable patents, or until such patents expire or they are finally determined to be held invalid or unenforceable. Similarly, if any third-party patent were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy or patient selection methods, the holders of any such patent may be able to block our ability to develop and commercialize the applicable product candidate unless we obtain a license, limit our uses, or until such patent expires or is finally determined to be held invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms or at all.

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

### ***We may not be able to protect our intellectual property rights throughout the world.***

Filing, prosecuting and defending patents on all of our product candidates throughout the world would be prohibitively expensive. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products in jurisdictions where we do not have any issued patents and our patent claims or other intellectual property rights may not be effective or sufficient to prevent them from so competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biopharmaceuticals, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

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***Confidentiality agreements with employees and others may not adequately prevent disclosure of our trade secrets and other proprietary information and may not adequately protect our intellectual property, which could limit our ability to compete.***

Because we operate in the highly technical field of research and development of small molecule drugs, we rely in part on trade secret protection in order to protect our proprietary trade secrets and unpatented know-how. However, trade secrets are difficult to protect, and we cannot be certain that others will not develop the same or similar technologies on their own. We have taken steps, including entering into confidentiality agreements with our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors, to protect our trade secrets and unpatented know-how. These agreements generally require that the other party keep confidential and not disclose to third parties all confidential information developed by the party or made known to the party by us during the course of the party's relationship with us. We also typically obtain agreements from these parties which provide that inventions conceived by the party in the course of rendering services to us will be our exclusive property. However, these agreements may not be honored and may not effectively assign intellectual property rights to us. Enforcing a claim that a party illegally obtained and is using our trade secrets or know-how is difficult, expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States may be less willing to protect trade secrets or know-how. The failure to obtain or maintain trade secret protection could adversely affect our competitive position.

***If we breach any of the agreements under which we license commercialization rights to our product candidates from third parties, we could lose license rights that are important to our business.***

We license the use, development and commercialization rights for all of our product candidates, and may enter into similar licenses in the future. Under each of our existing license agreements we are subject to commercialization and development, diligence obligations, milestone payment obligations, royalty payments and other obligations. If we fail to comply with any of these obligations or otherwise breach our license agreements, our licensing partners may have the right to terminate the license in whole or in part.

Generally, the loss of any one of our three current licenses or other licenses in the future could materially harm our business, prospects, financial condition and results of operations.

***Intellectual property rights do not necessarily address all potential threats to our competitive advantage.***

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business, or permit us to maintain our competitive advantage. The following examples are illustrative:

Others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of the patents that we own or have exclusively licensed.

We or our licensors or strategic partners might not have been the first to make the inventions covered by the issued patent or pending patent application that we own or have exclusively licensed.

We or our licensors or strategic partners might not have been the first to file patent applications covering certain of our inventions.

Others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights.

It is possible that our pending patent applications will not lead to issued patents.

Issued patents that we own or have exclusively licensed may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors.



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Our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets.

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We may not develop additional proprietary technologies that are patentable.

The patents of others may have an adverse effect on our business.

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

*From time to time we may need to license patents, intellectual property and proprietary technologies from third parties, which may be difficult or expensive to obtain.*

We may need to obtain licenses to patents and other proprietary rights held by third parties to successfully develop, manufacture and market our drug products. As an example, it may be necessary to use a third party's proprietary technology to reformulate one of our drug products in order to improve upon the capabilities of the drug product. If we are unable to timely obtain these licenses on reasonable terms, our ability to commercially exploit our drug products may be inhibited or prevented.

### **Risks Related to Ownership of Our Common Stock**

*The market price of our common stock may fluctuate significantly, and investors in our common stock may lose all or a part of their investment.*

The market prices for securities of biotechnology and pharmaceutical companies have historically been highly volatile, and the market has from time to time experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies. The market price of our common stock may fluctuate significantly in response to numerous factors, some of which are beyond our control, such as:

actual or anticipated adverse results or delays in our clinical trials;

our failure to commercialize our product candidates, if approved;

unanticipated serious safety concerns related to the use of any of our product candidates;

adverse regulatory decisions;

changes in laws or regulations applicable to our product candidates, including but not limited to clinical trial requirements for approvals;

legal disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our product candidates, government investigations and the results of any proceedings or lawsuits, including patent or stockholder litigation;

our decision to initiate a clinical trial, not initiate a clinical trial or to terminate an existing clinical trial;

our dependence on third parties, including CROs;

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announcements of the introduction of new products by our competitors;

market conditions in the pharmaceutical and biotechnology sectors;

announcements concerning product development results or intellectual property rights of others;

future issuances of common stock or other securities;

the addition or departure of key personnel;

failure to meet or exceed any financial guidance or expectations regarding development milestones that we may provide to the public;

actual or anticipated variations in quarterly operating results;

our failure to meet or exceed the estimates and projections of the investment community;

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overall performance of the equity markets and other factors that may be unrelated to our operating performance or the operating performance of our competitors, including changes in market valuations of similar companies;

conditions or trends in the biotechnology and biopharmaceutical industries;

introduction of new products offered by us or our competitors;

announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;

issuances of debt or equity securities;

sales of our common stock by us or our stockholders in the future;

trading volume of our common stock;

ineffectiveness of our internal controls;

publication of research reports about us or our industry or positive or negative recommendations or withdrawal of research coverage by securities analysts;

general political and economic conditions;

effects of natural or man-made catastrophic events; and;

other events or factors, many of which are beyond our control.

Further, the equity markets in general have recently experienced extreme price and volume fluctuations. Continued market fluctuations could result in extreme volatility in the price of our common stock, which could cause a decline in the value of our common stock. Price volatility of our common stock might worsen if the trading volume of our common stock is low. The realization of any of the above risks or any of a broad range of other risks, including those described in these Risk Factors, could have a dramatic and material adverse impact on the market price of our common stock.

***Trading of our common stock is limited, and trading restrictions imposed on us by applicable regulations may further reduce our trading, making it difficult for our stockholders to sell their shares.***

The liquidity of our common stock is limited, not only in terms of the number of shares that can be bought and sold at a given price, but also as it may be adversely affected by delays in the timing of transactions and reduction in security analysts' and the media's coverage of us, if at all.

The foregoing factors may result in lower prices for our common stock than might otherwise be obtained and could also result in a larger spread between the bid and asked prices for our common stock. In addition, without a large public float, our common stock is less liquid than the stock of companies with broader public ownership, and, as a result, the trading price of our common stock may be more volatile. In the absence of an active public trading market, an investor may be unable to liquidate his investment in our common stock. Trading of a relatively small volume of our common stock may have a greater impact on the trading price of our stock than would be the case if our public float were larger. We cannot

predict the price at which our common stock will trade at any given time.

***We do not expect to pay cash dividends on our common stock, and investors will be able to receive cash in respect of their shares of our common stock only upon the sale of such shares.***

We have no intention in the foreseeable future to pay any cash dividends on our common stock. Therefore, an investor in our common stock may obtain an economic benefit from the common stock only after an increase in its trading price and only then by selling the common stock.

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### ***A sale of a substantial number of shares of the common stock may cause the price of our common stock to decline.***

If our stockholders sell, or the market perceives that our stockholders intend to sell for various reasons, substantial amounts of our common stock in the public market, including shares issued in connection with the exercise of outstanding options or warrants, the market price of our common stock could fall. Sales of a substantial number of shares of our common stock may make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem reasonable or appropriate. We may become involved in securities class action litigation that could divert management's attention and harm our business.

The stock markets have from time to time experienced significant price and volume fluctuations that have affected the market prices for the common stock of biotechnology and biopharmaceutical companies. These broad market fluctuations may cause the market price of our common stock to decline. In the past, securities class action litigation has often been brought against a company following a decline in the market price of our securities. This risk is especially relevant for us because biotechnology and biopharmaceutical companies have experienced significant stock price volatility in recent years. We may become involved in this type of litigation in the future. Litigation often is expensive and diverts management's attention and resources, which could adversely affect our business.

### ***Existing stockholders' interest in us may be diluted by additional issuances of equity securities and raising funds through lending and licensing arrangements may restrict our operations or require us to relinquish proprietary rights.***

We may issue additional equity securities to fund future expansion and pursuant to employee benefit plans. We may also issue additional equity for other purposes. These securities may have the same rights as our common stock or, alternatively, may have dividend, liquidation or other preferences to our common stock. The issuance of additional equity securities will dilute the holdings of existing stockholders and may reduce the share price of our common stock.

If we raise additional funds through collaboration, licensing or other similar arrangements, it may be necessary to relinquish potentially valuable rights to our product candidates, potential products or proprietary technologies, or grant licenses on terms that are not favorable to us. If adequate funds are not available, our ability to achieve profitability or to respond to competitive pressures would be significantly limited and we may be required to delay, significantly curtail or eliminate the development of our product candidates.

### ***Directors, executive officers, principal stockholders and affiliated entities own a significant percentage of our capital stock, and they may make decisions that you do not consider to be in your best interests or those of our other stockholders.***

As of September 30, 2013, our directors, executive officers and principal stockholders beneficially owned, in the aggregate, approximately 27.0% of our outstanding voting securities. As a result, if some or all of them acted together, they would have the ability to exert substantial influence over the election of our board of directors and the outcome of issues requiring approval by our stockholders. This concentration of ownership may also have the effect of delaying or preventing a change in control of our company that may be favored by other stockholders. This could prevent transactions in which stockholders might otherwise recover a premium for their shares over current market prices.

### ***Our ability to use our net operating loss carry forwards may be subject to limitation.***

Generally, a change of more than 50% in the ownership of a company's stock, by value, over a three-year period constitutes an ownership change for U.S. federal income tax purposes. An ownership change may limit our ability to use our net operating loss carryforwards attributable to the period prior to the change. As a result, if

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we earn net taxable income, our ability to use our pre-change net operating loss carryforwards to offset U.S. federal taxable income may become subject to limitations, which could potentially result in increased future tax liability for us. At December 31, 2012, we had net operating loss carryforwards aggregating approximately \$10.5 million.

***Our certificate of incorporation, as amended, and bylaws provide for indemnification of officers and directors at our expense and limits their liability, which may result in a major cost to us and hurt the interests of our stockholders because corporate resources may be expended for the benefit of our officers and/or directors.***

Our certificate of incorporation, as amended, bylaws and applicable Delaware law provide for the indemnification of our directors, officers, employees, and agents, under certain circumstances, against attorney's fees and other expenses incurred by them in any litigation to which they become a party arising from their association with or activities on our behalf. We will also bear the expenses of such litigation for any of our directors, officers, employees, or agents, upon such person's promise to repay us, therefore if it is ultimately determined that any such person shall not have been entitled to indemnification. This indemnification policy could result in substantial expenditures by us, which we will be unable to recover.

***Our corporate documents and Delaware law contain provisions that could discourage, delay or prevent a change in control of our company, prevent attempts to replace or remove current management and reduce the market price of our common stock.***

Provisions in our certificate of incorporation, as amended, and bylaws may discourage, delay or prevent a merger or acquisition involving us that our stockholders may consider favorable. For example, our certificate of incorporation, as amended, authorizes our board of directors to issue up to 100,000,000 shares of blank check preferred stock. As a result, without further stockholder approval, the board of directors has the authority to attach special rights, including voting and dividend rights, to this preferred stock. With these rights, preferred stockholders could make it more difficult for a third party to acquire us.

We are also subject to the anti-takeover provisions of the Delaware General Corporation Law. Under these provisions, if anyone becomes an interested stockholder, we may not enter into a business combination with that person for three years without special approval, which could discourage a third party from making a takeover offer and could delay or prevent a change in control of us. An interested stockholder means, generally, someone owning 15% or more of our outstanding voting stock or an affiliate of ours that owned 15% or more of our outstanding voting stock during the past three years, subject to certain exceptions as described in the Delaware General Corporation Law.

***Compliance with changing regulations concerning corporate governance and public disclosure may result in additional expenses.***

There have been changing laws, regulations and standards relating to corporate governance and public disclosure, including the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, the Sarbanes-Oxley Act of 2002, or Sarbanes-Oxley, new regulations promulgated by the SEC and rules promulgated by the national securities exchanges. The Dodd-Frank Act, enacted in July 2010, expands federal regulation of corporate governance matters and imposes requirements on public companies to, among other things, provide stockholders with a periodic advisory vote on executive compensation and also adds compensation committee reforms and enhanced pay-for-performance disclosures. While some provisions of the Dodd-Frank Act are effective upon enactment, others will be implemented upon the SEC's adoption of related rules and regulations. The scope and timing of the adoption of such rules and regulations is uncertain and, accordingly, the cost of compliance with the Dodd-Frank Act is also uncertain.

These new or changed laws, regulations and standards are, or will be, subject to varying interpretations in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies, which could result in continuing uncertainty.

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regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. As a result, our efforts to comply with evolving laws, regulations and standards are likely to continue to result in increased general and administrative expenses and a diversion of management time and attention from revenue-generating activities to compliance activities. Members of our board of directors and our principal executive officer and principal financial officer could face an increased risk of personal liability in connection with the performance of their duties. As a result, we may have difficulty attracting and retaining qualified directors and executive officers, which could harm our business. If the actions we take in our efforts to comply with new or changed laws, regulations and standards differ from the actions intended by regulatory or governing bodies, we could be subject to liability under applicable laws or our reputation may be harmed.

***If we fail to comply with the rules under the Sarbanes-Oxley Act of 2002 related to accounting controls and procedures, or, if we discover material weaknesses and deficiencies in our internal control and accounting procedures, our stock price could decline significantly and raising capital could be more difficult.***

Sarbanes-Oxley specifically requires, among other things, that we maintain effective internal controls for financial reporting and disclosure of controls and procedures. In particular, we must perform system and process evaluation and testing of our internal controls over financial reporting to allow management to report on the effectiveness of our internal controls over financial reporting, as required by Section 404 of Sarbanes-Oxley. Our testing, or the subsequent testing by our independent registered public accounting firm, if and when required, may reveal deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses. Our compliance with Section 404 will require that we incur substantial accounting expense and expend significant management efforts. We currently do not have an internal audit group, and we will need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. Moreover, if we are not able to comply with the requirements of Section 404 in a timely manner, or if we or our independent registered public accounting firm identifies deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline, and we could be subject to sanctions or investigations by the SEC or other regulatory authorities, which would require additional financial and management resources.



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**CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS**

This prospectus supplement and any accompanying prospectus, including the documents that we incorporate by reference, contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Such forward-looking statements include those that express plans, anticipation, intent, contingency, goals, targets or future development and/or otherwise are not statements of historical fact. These forward-looking statements are based on our current expectations and projections about future events and they are subject to risks and uncertainties known and unknown that could cause actual results and developments to differ materially from those expressed or implied in such statements.

In some cases, you can identify forward-looking statements by terminology, such as expects, anticipates, intends, estimates, plans, believes, seeks, may, should, could or the negative of such terms or other similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus supplement.

You should read this prospectus supplement and any accompanying prospectus and the documents that we reference herein and therein and have filed as exhibits to the registration statement, of which this prospectus supplement is part, completely and with the understanding that our actual future results may be materially different from what we expect. You should assume that the information appearing in this prospectus supplement and any accompanying prospectus is accurate as of the date on the front cover of this prospectus supplement. Because the risk factors referred to above, as well as the risk factors referred to on page S- of this prospectus supplement and incorporated herein by reference, could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of the information presented in this prospectus supplement and the accompanying prospectus, and particularly our forward-looking statements, by these cautionary statements.

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**USE OF PROCEEDS**

We estimate that our net proceeds from the sale of the common stock offered pursuant to this prospectus supplement, will be approximately \$27.2 million, or approximately \$31.4 million if the underwriters exercise in full their option to purchase 622,500 additional shares, based upon the public offering price of \$7.25 per share and after deducting underwriting discount and the estimated offering expenses that are payable by us.

We currently intend to use the net proceeds from this offering to fund our research and development activities, including our registrational clinical trial of Cynviloq, for working capital and other general corporate purposes, and possibly acquisitions of other companies, products or technologies.

We have not yet determined the amount of net proceeds to be used specifically for any of the foregoing purposes. Accordingly, our management will have significant discretion and flexibility in applying the net proceeds from this offering. Pending any use, as described above, we intend to invest the net proceeds in high-quality, short-term, interest-bearing securities.

**DIVIDEND POLICY**

We have never declared or paid cash dividends on our capital stock. We currently intend to retain our future earnings, if any, for use in our business and therefore do not anticipate paying cash dividends in the foreseeable future. In addition, unless waived, the terms of our loan and security agreement with Oxford Finance LLC and Silicon Valley Bank limit our ability to pay cash dividends. Payment of future dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs and plans for expansion.

**Table of Contents****CAPITALIZATION**

The following table sets forth our cash and cash equivalents and capitalization, each as of June 30, 2013:

on an actual basis;

on an actual basis; and on a pro forma basis giving effect to (i) the IgDraSol merger, (ii) the loan and security agreement with Oxford Finance LLC and Silicon Valley Bank, (iii) the Sherrington acquisition and (iv) the issuance of convertible promissory notes; and

on a pro forma as adjusted basis giving effect to (i) the IgDraSol merger, (ii) the loan and security agreement with Oxford Finance LLC and Silicon Valley Bank, (iii) the Sherrington acquisition, (iv) the issuance of convertible promissory notes, (v) the sale of the shares at the public offering price of \$7.25 per share, after deducting underwriting discounts and commissions and other estimated offering expenses payable by us and (vi) the conversion of the convertible promissory notes as of the date of the offering.

You should consider this table in conjunction with our financial statements and the notes to those financial statements included elsewhere in this prospectus.

	As of June 30, 2013		
	Actual	Pro Forma	Pro Forma As Adjusted
Cash and cash equivalents	\$ 5,754,579	\$ 11,859,564	\$ 39,019,109
Capitalization:			
Warrant liability	\$	\$ 214,679	\$ 214,679
Long-term debt (including current portion)	827,228	6,850,000	5,000,000
Stockholders' equity:			
Preferred stock, \$0.0001 par value, 100,000,000 shares authorized and no shares issued and outstanding			
Common stock, \$0.0001 par value, 750,000,000 shares authorized, 13,443,020, issued and outstanding actual; 16,649,734 and 21,055,558 shares issued and outstanding, pro forma and pro forma, as adjusted, respectively.	1,344	34,368	34,808
Additional paid-in capital	23,977,459	54,014,511	83,023,615
Deficit accumulated during the development stage	(18,209,249)	(21,071,846)	(21,071,846)
Total shareholders' equity	\$ 5,769,554	\$ 32,977,033	\$ 61,986,577
Total capitalization	\$ 6,596,782	\$ 40,041,712	\$ 67,201,256

**Table of Contents****DILUTION**

If you purchase our securities in this offering, your interest will be diluted to the extent of the difference between the public offering price per share of our common stock and the net tangible book value per share of our common stock after this offering. We calculate net tangible book value per share by dividing our net tangible assets (tangible assets less total liabilities) by the number of shares of our common stock issued and outstanding as of June 30, 2013.

Our pro forma net tangible book value at June 30, 2013 was \$32,977,033, or \$1.98 per share, based on 16,649,734 shares of our common stock outstanding, after giving effect (i) the IgDraSol merger, (ii) the loan and security agreement with Oxford Finance LLC and Silicon Valley Bank, (iii) the Sherrington acquisition; and (iv) the issuance of convertible promissory notes. After giving effect to (i) the issuance and sale of all the shares in this offering at the public offering price of \$7.25 per share, less the estimated offering expenses and (ii) the conversion of the convertible promissory notes as of the date of the offering, our pro forma as adjusted pro forma net tangible book value at June 30, 2013 would be \$61,986,577 or \$2.94 per share. This represents an immediate increase in pro forma net tangible book value of \$0.96 per share to existing stockholders and an immediate dilution of \$4.31 per share to investors in this offering. The following table illustrates this per share dilution:

Public offering price per share	\$ 7.25
Pro forma net tangible book value per share as of June 30, 2013	\$ 1.98
Increase per share attributable to this offering	\$ 0.96
Pro forma as adjusted net tangible book value per share as of June 30, 2013	\$ 2.94
Dilution in net tangible book value per share to new investors in this offering	\$ 4.31

If the underwriters exercise in full their option to purchase 622,500 additional shares, the pro forma as adjusted net tangible book value will increase to \$3.05 per share, representing an increase to existing stockholders of \$1.07 per share and immediate dilution of \$4.20 per share to new investors purchasing shares in this offering.

The foregoing illustration does not reflect potential dilution from the exercise of outstanding options or warrants to purchase shares of our common stock.

**Table of Contents****UNDERWRITING**

Aegis Capital Corp. is acting as the sole book-running manager of the offering and as representative of the underwriters, or the representative. We have entered into an underwriting agreement dated October 24, 2013 with the representative. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to each underwriter named below, and each underwriter named below has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus supplement, the number of shares of common stock set forth opposite its name below.

<b>Underwriter</b>	<b>Number of Shares</b>
Aegis Capital Corp.	3,527,500
CRT Capital Group LLC	622,500
<b>Total</b>	<b>4,150,000</b>

The underwriters are committed to purchase all the shares of common stock offered by us other than those covered by the option to purchase additional shares described below, if they purchase any shares. The obligations of the underwriters may be terminated upon the occurrence of certain events specified in the underwriting agreement. Furthermore, pursuant to the underwriting agreement, the underwriters' obligations are subject to customary conditions, representations and warranties contained in the underwriting agreement, such as receipt by the underwriters of officers' certificates and legal opinions.

We have agreed to indemnify the underwriters against specified liabilities, including liabilities under the Securities Act of 1933, and to contribute to payments the underwriters may be required to make in respect thereof.

The underwriters are offering the common stock, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel and other conditions specified in the underwriting agreement. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

The underwriters propose to offer the common stock offered by us to the public at the public offering price set forth on the cover of this prospectus supplement. In addition, the underwriters may offer some of the common stock to other securities dealers at such price less a concession of \$0.29 per share. After the initial offering, the public offering price and concession to dealers may be changed.

We have granted the underwriters an over-allotment option. This option, which is exercisable for up to 45 days after the date of this prospectus, permits the underwriters to purchase a maximum of 622,500 additional shares of common stock from us to cover over-allotments. If the underwriters exercise all or part of this option, they will purchase shares of common stock covered by the option at the public offering price that appears on the cover page of this prospectus supplement, less the underwriting discount. If this option is exercised in full, the total price to the public will be \$34.6 million and the total net proceeds to us will be \$31.4 million.

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*Discounts and Commissions.* The following table shows the public offering price, underwriting discount and proceeds, before expenses, to us. The information assumes either no exercise or full exercise by the underwriters of their over-allotment option.

	Per Share	Total	
		Without Over-Allotment	With Over-Allotment
Public offering price	\$ 7.25	\$ 30,087,500	\$ 34,600,625
Underwriting discount (7%)	\$ 0.5075	\$ 2,106,125	\$ 2,422,044
Non-accountable expense allowance (0.5%)(1)	\$ 0.03625	\$ 150,438	\$ 150,438
Proceeds, before expenses, to us	\$ 6.70625	\$ 27,830,938	\$ 32,028,143

(1) The expense allowance of 0.5% is not payable with respect to the shares sold upon exercise of the underwriters' over-allotment option. We have paid an expense deposit of \$25,000 to the representative, which will be applied against the accountable expenses that will be paid by us to the underwriters in connection with this offering. The underwriting agreement, however, provides that in the event the offering is terminated, the \$25,000 expense deposit paid to the representative will be returned to the extent offering expenses are not actually incurred.

We have also agreed to pay the underwriters' expenses relating to the offering, including (a) all fees, expenses and disbursements relating to background checks of our officers and directors in an amount not to exceed \$5,000 per individual and \$15,000 in the aggregate; (b) all fees incurred in clearing this offering with FINRA; (c) all fees, expenses and disbursements relating to the registration, qualification or exemption of securities offered under the securities laws of foreign jurisdictions designated by the underwriters; (d) the costs associated with bound volumes of the public offering materials as well as commemorative mementos and lucite tombstones, each of which we or our designee shall provide within a reasonable time after the closing of the offering in such quantities as the underwriters may reasonably request and which expense shall not exceed \$2,000; (e) upon successfully completing this offering, \$20,000 for the underwriters' use of Ipreo's book-building, prospectus tracking and compliance software for this offering; and (f) upon successfully completing this offering, up to \$20,000 of the representative's actual accountable road show expenses for the offering.

We estimate that the total expenses of the offering, excluding underwriting discount and non-accountable expense allowance, will be approximately \$671,393.

*Discretionary Accounts.* The underwriters do not intend to confirm sales of the securities offered hereby to any accounts over which they have discretionary authority.

*Lock-Up Agreements.* Pursuant to certain lock-up agreements, we, our executive officers and directors, and certain of our stockholders, have agreed, subject to certain exceptions, not to offer, sell, assign, transfer, pledge, contract to sell, or otherwise dispose of or announce the intention to otherwise dispose of, or enter into any swap, hedge or similar agreement or arrangement that transfers, in whole or in part, the economic risk of ownership of, directly or indirectly, engage in any short selling of any common stock or securities convertible into or exchangeable or exercisable for any common stock without the prior written consent of the representatives, for a period of 90 days after the date of the pricing of the offering and subject to certain exceptions and subject to an 18-day extension.

This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for common stock. It also applies to common stock owned now or acquired later by the person

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executing the agreement or for which the person executing the agreement later acquires the power of disposition. The exceptions permit, among other things and subject to restrictions, (1) the issuance by us of stock options pursuant to our existing stock incentive plans, (2) the issuance of common stock upon the exercise of outstanding stock options and warrants or (3) transfers pursuant to a sale or an offer to purchase 100% of our outstanding common stock.

*Representative s Warrants.* We have agreed to issue to the representative warrants to purchase up to a total of 182,600 shares of common stock (4.4% of the shares of common stock sold). The warrants are exercisable at \$9.0625 per share, commencing one year from the date of effectiveness of our registration statement, or July 22, 2014, and expiring five years after the effective date of our registration statement, or July 22, 2018. The warrants have been deemed compensation by FINRA and are therefore subject to a 180-day lock-up pursuant to Rule 5110(g)(1) of FINRA. The representative (or permitted assignees under the Rule) will not sell, transfer, assign, pledge, or hypothecate these warrants or the securities underlying these options, nor will it engage in any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of the warrants or the underlying securities for a period of 180 days from the date of this prospectus supplement. In addition, the warrants provide for registration rights upon request, in certain cases. We will bear all fees and expenses attendant to registering the securities issuable on exercise of the warrants other than underwriting commissions incurred and payable by the holders. The exercise price and number of shares issuable upon exercise of the warrants may be adjusted in certain circumstances including in the event of a stock dividend, extraordinary cash dividend or our recapitalization, reorganization, merger or consolidation. However, the warrant exercise price or underlying shares will not be adjusted for issuances of shares of common stock at a price below the warrant exercise price.

*Right of First Refusal.* Until twelve months after the closing date of the offering, the representative shall have an irrevocable right of first refusal to act as lead manager or sole book runner, exclusive placement agent, exclusive financial advisor or in any other similar capacity, on the representative s customary terms and conditions, in the event our company or any subsidiary retains or otherwise uses (or seeks to retain or use) the services of an investment bank or similar financial advisor to pursue a registered, underwritten public offering of, a private placement of securities, or other similar transaction.

*Electronic Offer, Sale and Distribution of Shares.* A prospectus supplement in electronic format may be made available on the websites maintained by one or more of the underwriters or selling group members, if any, participating in this offering and one or more of the underwriters participating in this offering may distribute prospectus supplements electronically. The representatives may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the underwriters and selling group members that will make internet distributions on the same basis as other allocations. Other than the prospectus supplement in electronic format, the information on these websites is not part of this prospectus supplement or the registration statement of which this prospectus supplement forms a part, has not been approved or endorsed by us or any underwriter in its capacity as underwriter, and should not be relied upon by investors.

*Other Relationships.* Certain of the underwriters and their affiliates have provided, and may in the future provide, various investment banking, commercial banking and other financial services for us and our affiliates for which they have received, and may in the future receive, customary fees, however, except as disclosed in this prospectus supplement, we have no present arrangements with any of the underwriters for any further services.

On July 8, 2013, we paid CRT Capital LLC, acting as financial advisor to IgDraSol, a fee of \$354,472 in connection with the acquisition of IgDraSol.

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*Stabilization.* In connection with this offering, the underwriters may engage in stabilizing transactions, overallotment transactions, syndicate covering transactions, penalty bids and purchases to cover positions created by short sales.

Stabilizing transactions permit bids to purchase shares so long as the stabilizing bids do not exceed a specified maximum, and are engaged in for the purpose of preventing or retarding a decline in the market price of the shares while the offering is in progress.

Overallotment transactions involve sales by the underwriters of shares in excess of the number of shares the underwriters are obligated to purchase. This creates a syndicate short position which may be either a covered short position or a naked short position. In a covered short position, the number of shares over-allotted by the underwriters is not greater than the number of shares that they may purchase in the overallotment option. In a naked short position, the number of shares involved is greater than the number of shares in the overallotment option. The underwriters may close out any short position by exercising their overallotment option and/or purchasing shares in the open market.

Syndicate covering transactions involve purchases of shares in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of shares to close out the short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared with the price at which they may purchase shares through exercise of the overallotment option. If the underwriters sell more shares than could be covered by exercise of the overallotment option and, therefore, have a naked short position, the position can be closed out only by buying shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that after pricing there could be downward pressure on the price of the shares in the open market that could adversely affect investors who purchase in the offering.

Penalty bids permit the representative to reclaim a selling concession from a syndicate member when the shares originally sold by that syndicate member are purchased in stabilizing or syndicate covering transactions to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our shares or common stock or preventing or retarding a decline in the market price of our shares or common stock. As a result, the price of our common stock in the open market may be higher than it would otherwise be in the absence of these transactions. Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of our common stock. These transactions may be effected on The NASDAQ Capital Market, in the over-the-counter market or otherwise and, if commenced, may be discontinued at any time.

*Passive market making.* In connection with this offering, underwriters and selling group members may engage in passive market making transactions in our common stock on the OTCQB marketplace in accordance with Rule 103 of Regulation M under the Exchange Act, during a period before the commencement of offers or sales of the shares and extending through the completion of the distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded.

### **Offer restrictions outside the United States**

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus supplement in any jurisdiction where action for that purpose is required. The securities offered by this prospectus supplement may not be offered or sold, directly or indirectly, nor may this prospectus supplement or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under



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circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus supplement comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus supplement. This prospectus supplement does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus supplement in any jurisdiction in which such an offer or a solicitation is unlawful.

### **Australia**

This prospectus is not a disclosure document under Chapter 6D of the Australian Corporations Act, has not been lodged with the Australian Securities and Investments Commission and does not purport to include the information required of a disclosure document under Chapter 6D of the Australian Corporations Act. Accordingly, (i) the offer of the securities under this prospectus is only made to persons to whom it is lawful to offer the securities without disclosure under Chapter 6D of the Australian Corporations Act under one or more exemptions set out in section 708 of the Australian Corporations Act, (ii) this prospectus is made available in Australia only to those persons as set forth in clause (i) above, and (iii) the offeree must be sent a notice stating in substance that by accepting this offer, the offeree represents that the offeree is such a person as set forth in clause (i) above, and, unless permitted under the Australian Corporations Act, agrees not to sell or offer for sale within Australia any of the securities sold to the offeree within 12 months after its transfer to the offeree under this prospectus.

### **China**

The information in this document does not constitute a public offer of the securities, whether by way of sale or subscription, in the People's Republic of China (excluding, for purposes of this paragraph, Hong Kong Special Administrative Region, Macau Special Administrative Region and Taiwan). The securities may not be offered or sold directly or indirectly in the PRC to legal or natural persons other than directly to qualified domestic institutional investors.

### **European Economic Area Belgium, Germany, Luxembourg and Netherlands**

The information in this document has been prepared on the basis that all offers of securities will be made pursuant to an exemption under the Directive 2003/71/EC ( Prospectus Directive ), as implemented in Member States of the European Economic Area (each, a Relevant Member State ), from the requirement to produce a prospectus for offers of securities.

An offer to the public of securities has not been made, and may not be made, in a Relevant Member State except pursuant to one of the following exemptions under the Prospectus Directive as implemented in that Relevant Member State:

- (a) to legal entities that are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;
- (b) to any legal entity that has two or more of (i) an average of at least 250 employees during its last fiscal year; (ii) a total balance sheet of more than 43,000,000 (as shown on its last annual unconsolidated or consolidated financial statements) and (iii) an annual net turnover of more than 50,000,000 (as shown on its last annual unconsolidated or consolidated financial statements);
- (c) to fewer than 100 natural or legal persons (other than qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive) subject to obtaining the prior consent of the Company or any underwriter for any such offer; or
- (d) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of securities shall result in a requirement for the publication by the Company of a prospectus pursuant to Article 3 of the Prospectus Directive.

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### **France**

This document is not being distributed in the context of a public offering of financial securities (offre au public de titres financiers) in France within the meaning of Article L.411-1 of the French Monetary and Financial Code (Code monétaire et financier) and Articles 211-1 et seq. of the General Regulation of the French Autorité des marchés financiers ( AMF ). The securities have not been offered or sold and will not be offered or sold, directly or indirectly, to the public in France.

This document and any other offering material relating to the securities have not been, and will not be, submitted to the AMF for approval in France and, accordingly, may not be distributed or caused to be distributed, directly or indirectly, to the public in France.

Such offers, sales and distributions have been and shall only be made in France to (i) qualified investors (investisseurs qualifiés) acting for their own account, as defined in and in accordance with Articles L.411-2-II-2° and D.411-1 to D.411-3, D. 744-1, D.754-1 and D.764-1 of the French Monetary and Financial Code and any implementing regulation and/or (ii) a restricted number of non-qualified investors (cercle restreint d'investisseurs) acting for their own account, as defined in and in accordance with Articles L.411-2-II-2° and D.411-4, D.744-1, D.754-1 and D.764-1 of the French Monetary and Financial Code and any implementing regulation.

Pursuant to Article 211-3 of the General Regulation of the AMF, investors in France are informed that the securities cannot be distributed (directly or indirectly) to the public by the investors otherwise than in accordance with Articles L.411-1, L.411-2, L.412-1 and L.621-8 to L.621-8-3 of the French Monetary and Financial Code.

### **Ireland**

The information in this document does not constitute a prospectus under any Irish laws or regulations and this document has not been filed with or approved by any Irish regulatory authority as the information has not been prepared in the context of a public offering of securities in Ireland within the meaning of the Irish Prospectus (Directive 2003/71/EC) Regulations 2005 (the Prospectus Regulations ). The securities have not been offered or sold, and will not be offered, sold or delivered directly or indirectly in Ireland by way of a public offering, except to (i) qualified investors as defined in Regulation 2(l) of the Prospectus Regulations and (ii) fewer than 100 natural or legal persons who are not qualified investors.

### **Israel**

The securities offered by this prospectus have not been approved or disapproved by the Israeli Securities Authority (the ISA), or ISA, nor have such securities been registered for sale in Israel. The shares may not be offered or sold, directly or indirectly, to the public in Israel, absent the publication of a prospectus. The ISA has not issued permits, approvals or licenses in connection with the offering or publishing the prospectus; nor has it authenticated the details included herein, confirmed their reliability or completeness, or rendered an opinion as to the quality of the securities being offered. Any resale in Israel, directly or indirectly, to the public of the securities offered by this prospectus is subject to restrictions on transferability and must be effected only in compliance with the Israeli securities laws and regulations.

### **Italy**

The offering of the securities in the Republic of Italy has not been authorized by the Italian Securities and Exchange Commission (Commissione Nazionale per le Società e la Borsa, CONSOB) pursuant to the Italian securities legislation and, accordingly, no offering material relating to the securities may be distributed in Italy

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and such securities may not be offered or sold in Italy in a public offer within the meaning of Article 1.1(t) of Legislative Decree No. 58 of 24 February 1998 ( Decree No. 58 ), other than:

to Italian qualified investors, as defined in Article 100 of Decree no.58 by reference to Article 34-ter of CONSOB Regulation no. 11971 of 14 May 1999 ( Regulation no. 11971 ) as amended ( Qualified Investors ); and

in other circumstances that are exempt from the rules on public offer pursuant to Article 100 of Decree No. 58 and Article 34-ter of Regulation No. 11971 as amended.

Any offer, sale or delivery of the securities or distribution of any offer document relating to the securities in Italy (excluding placements where a Qualified Investor solicits an offer from the issuer) under the paragraphs above must be:

made by investment firms, banks or financial intermediaries permitted to conduct such activities in Italy in accordance with Legislative Decree No. 385 of 1 September 1993 (as amended), Decree No. 58, CONSOB Regulation No. 16190 of 29 October 2007 and any other applicable laws; and

in compliance with all relevant Italian securities, tax and exchange controls and any other applicable laws.

Any subsequent distribution of the securities in Italy must be made in compliance with the public offer and prospectus requirement rules provided under Decree No. 58 and the Regulation No. 11971 as amended, unless an exception from those rules applies. Failure to comply with such rules may result in the sale of such securities being declared null and void and in the liability of the entity transferring the securities for any damages suffered by the investors.

## **Japan**

The securities have not been and will not be registered under Article 4, paragraph 1 of the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948), as amended (the FIEL ) pursuant to an exemption from the registration requirements applicable to a private placement of securities to Qualified Institutional Investors (as defined in and in accordance with Article 2, paragraph 3 of the FIEL and the regulations promulgated thereunder). Accordingly, the securities may not be offered or sold, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan other than Qualified Institutional Investors. Any Qualified Institutional Investor who acquires securities may not resell them to any person in Japan that is not a Qualified Institutional Investor, and acquisition by any such person of securities is conditional upon the execution of an agreement to that effect.

## **Portugal**

This document is not being distributed in the context of a public offer of financial securities (oferta pública de valores mobiliários) in Portugal, within the meaning of Article 109 of the Portuguese Securities Code (Código dos Valores Mobiliários). The securities have not been offered or sold and will not be offered or sold, directly or indirectly, to the public in Portugal. This document and any other offering material relating to the securities have not been, and will not be, submitted to the Portuguese Securities Market Commission (Comissão do Mercado de Valores Mobiliários) for approval in Portugal and, accordingly, may not be distributed or caused to be distributed, directly or indirectly, to the public in Portugal, other than under circumstances that are deemed not to qualify as a public offer under the Portuguese Securities Code. Such offers, sales and distributions of securities in Portugal are limited to persons who are qualified investors (as defined in the Portuguese Securities Code). Only such investors may receive this document and they may not distribute it or the information contained in it to any other person.

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### **Sweden**

This document has not been, and will not be, registered with or approved by Finansinspektionen (the Swedish Financial Supervisory Authority). Accordingly, this document may not be made available, nor may the securities be offered for sale in Sweden, other than under circumstances that are deemed not to require a prospectus under the Swedish Financial Instruments Trading Act (1991:980) (Sw. lag (1991:980) om handel med finansiella instrument). Any offering of securities in Sweden is limited to persons who are qualified investors (as defined in the Financial Instruments Trading Act). Only such investors may receive this document and they may not distribute it or the information contained in it to any other person.

### **Switzerland**

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange ( SIX ) or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering material relating to the securities may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering material relating to the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority (FINMA).

This document is personal to the recipient only and not for general circulation in Switzerland.

### **United Arab Emirates**

Neither this document nor the securities have been approved, disapproved or passed on in any way by the Central Bank of the United Arab Emirates or any other governmental authority in the United Arab Emirates, nor has the Company received authorization or licensing from the Central Bank of the United Arab Emirates or any other governmental authority in the United Arab Emirates to market or sell the securities within the United Arab Emirates. This document does not constitute and may not be used for the purpose of an offer or invitation. No services relating to the securities, including the receipt of applications and/or the allotment or redemption of such shares, may be rendered within the United Arab Emirates by the Company.

No offer or invitation to subscribe for securities is valid or permitted in the Dubai International Financial Centre.

### **United Kingdom**

Neither the information in this document nor any other document relating to the offer has been delivered for approval to the Financial Services Authority in the United Kingdom and no prospectus (within the meaning of section 85 of the Financial Services and Markets Act 2000, as amended ( FSMA )) has been published or is intended to be published in respect of the securities. This document is issued on a confidential basis to qualified investors (within the meaning of section 86(7) of FSMA) in the United Kingdom, and the securities may not be offered or sold in the United Kingdom by means of this document, any accompanying letter or any other document, except in circumstances which do not require the publication of a prospectus pursuant to section 86(1) FSMA. This document should not be distributed, published or reproduced, in whole or in part, nor may its contents be disclosed by recipients to any other person in the United Kingdom.

Any invitation or inducement to engage in investment activity (within the meaning of section 21 of FSMA) received in connection with the issue or sale of the securities has only been communicated or caused to be

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communicated and will only be communicated or caused to be communicated in the United Kingdom in circumstances in which section 21(1) of FSMA does not apply to us.

In the United Kingdom, this document is being distributed only to, and is directed at, persons (i) who have professional experience in matters relating to investments falling within Article 19(5) (investment professionals) of the Financial Services and Markets Act 2000 (Financial Promotions) Order 2005 ( FPO ), (ii) who fall within the categories of persons referred to in Article 49(2)(a) to (d) (high net worth companies, unincorporated associations, etc.) of the FPO or (iii) to whom it may otherwise be lawfully communicated (together relevant persons ). The investments to which this document relates are available only to, and any invitation, offer or agreement to purchase will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this document or any of its contents.

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### **LEGAL MATTERS**

The validity of the issuance of the securities offered hereby will be passed upon for us by Sichenzia Ross Friedman Ference LLP, New York, New York. Certain legal matters relating to the offering will be passed upon for the underwriters by Reed Smith LLP, New York, New York.

### **EXPERTS**

The consolidated balance sheets as of December 31, 2012 and 2011, and the related consolidated statements of operations, stockholders' equity, and cash flows for the years then ended and for the period from January 25, 2006 (Inception) through December 31, 2012 have been incorporated in reliance on the report of Mayer Hoffman McCann P.C., an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

The balance sheet as of December 31, 2012 and the related statement of operations, stockholders' deficit and cash flows from May 17, 2012 (Inception) to December 31, 2012 for IgDraSol, Inc. have been incorporated in reliance on the report of Kelly & Company, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

### **WHERE YOU CAN FIND MORE INFORMATION**

This prospectus supplement and the accompanying prospectus are part of the registration statement on Form S-3 we filed with the Securities and Exchange Commission, or SEC, under the Securities Act, and do not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus supplement or the accompanying prospectus to any of our contracts, agreements or other documents, the reference may not be complete, and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus supplement and the accompanying prospectus for a copy of such contract, agreement or other document. You may inspect a copy of the registration statement, including the exhibits and schedules, without charge, at the SEC's public reference room mentioned below, or obtain a copy from the SEC upon payment of the fees prescribed by the SEC.

Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and special 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). You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

We also maintain a web site at [www.sorrentotherapeutics.com](http://www.sorrentotherapeutics.com), through which you can access our SEC filings. The information set forth on our web site is not part of this prospectus supplement.

### **INCORPORATION OF DOCUMENTS BY REFERENCE**

We incorporate by reference the filed documents listed below, except as superseded, supplemented or modified by this prospectus, and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (unless otherwise noted, the SEC file number for each of the documents listed below is 000-52228):

Annual Report on Form 10-K for the year ended December 31, 2012 filed with the SEC on March 25, 2013, as amended by Amendment No. 1 filed with the SEC on March 27, 2013;

Quarterly Reports on Form 10-Q for the quarterly period ended March 31, 2013 filed with the SEC on May 15, 2013, as amended by Amendment No. 1 filed with the SEC on July 12, 2013 and June 30, 2013, filed with the SEC on August 13, 2013;

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Proxy Statement on Schedule 14A filed with the SEC on April 16, 2013;

Current Reports on Form 8-K (excluding any reports or portions thereof that are deemed to be furnished and not filed) filed with the SEC on January 11, 2013, February 26, 2013, March 13, 2013, March 14, 2013, April 26, 2013, May 14, 2013, July 12, 2013, August 1, 2013, September 11, 2013, September 30, 2013, October 2, 2013, October 7, 2013, October 11, 2013, October 15, 2013; October 21, 2013 and October 25, 2013; and

The description of our common stock contained in our Form 8-A filed with the SEC on October 23, 2013.

In addition, all documents filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act on or after the date of this prospectus supplement and before the termination of the offering under this prospectus supplement are deemed to be incorporated by reference into, and to be a part of, this prospectus supplement.

You may request, and we will provide you with, a copy of these filings, at no cost, by calling us at (858) 210-3700 or by writing to us at the following address:

Sorrento Therapeutics, Inc.

6042 Cornerstone Ct. West, Suite B

San Diego, California 92121

Attn.: Corporate Secretary

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PROSPECTUS

**SORRENTO THERAPEUTICS, INC.**

**\$100,000,000**

**Common Stock**

**Preferred Stock**

**Warrants**

**Units**

We may offer and sell, from time to time in one or more offerings, any combination of common stock, preferred stock, warrants or units having an aggregate initial offering price not exceeding \$100,000,000. The preferred stock, warrants, and units may be convertible or exercisable or exchangeable for common stock or preferred stock or other securities of ours. When we decide to sell a particular class or series of securities, we will provide specific terms of the offered securities in a prospectus supplement.

We will provide specific terms of the offerings of our securities in supplements to this prospectus. The prospectus supplement may also add, update or change information in this prospectus. You should read this prospectus and any prospectus supplement, as well as the documents incorporated by reference or deemed to be incorporated by reference into this prospectus, carefully before you invest.

**This prospectus may not be used to offer or sell our securities unless accompanied by a prospectus supplement relating to the offered securities.**

Our common stock is presently traded on the OTC QB under the symbol SRNE. On June 20, 2013, the last reported sale price of our common stock was \$0.35.

These securities may be sold directly by us, through dealers or agents designated from time to time, to or through underwriters, dealers or through a combination of these methods on a continuous or delayed basis. See Plan of Distribution in this prospectus. We may also describe the plan of distribution for any particular offering of our securities in a prospectus supplement. If any agents, underwriters or dealers are involved in the sale of any securities in respect of which this prospectus is being delivered, we will disclose their names and the nature of our arrangements with them in a prospectus supplement. The net proceeds we expect to receive from any such sale will also be included in a prospectus supplement.

**Investing in our securities involves various risks. See Risk Factors contained herein for more information on these risks. Additional risks will be described in the related prospectus supplements under the heading Risk Factors. You should review that section of the related prospectus supplements for a discussion of matters that investors in our securities should consider.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities, or passed upon the adequacy or accuracy of this prospectus or any**



**accompanying prospectus supplement. Any representation to the contrary is a criminal offense.**

**The date of this Prospectus is July 22, 2013.**

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### **ABOUT THIS PROSPECTUS**

This prospectus is part of a shelf registration statement that we filed with the Securities and Exchange Commission (the SEC) using a shelf registration process. Under this shelf registration process, we may sell any combination of the securities described in this prospectus in one or more offerings from time to time having an aggregate initial offering price of \$100,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer securities, we will provide you with a prospectus supplement that describes the specific amounts, prices and terms of the securities we offer. The prospectus supplement also may add, update or change information contained in this prospectus. You should read carefully both this prospectus and any prospectus supplement together with additional information described below under the caption Where You Can Find More Information.

This prospectus does not contain all the information provided in the registration statement we filed with the SEC. You should read both this prospectus, including the section titled Risk Factors, and the accompanying prospectus supplement, together with the additional information described under the heading Where You Can Find More Information.

You should rely only on the information contained or incorporated by reference in this prospectus or a prospectus supplement. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus is not an offer to sell securities, and it is not soliciting an offer to buy securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus or any prospectus supplement, as well as information we have previously filed with the SEC and incorporated by reference, is accurate as of the date on the front of those documents only. Our business, financial condition, results of operations and prospects may have changed since those dates.

### **OUR BUSINESS**

Sorrento Therapeutics, Inc. is referred to throughout this prospectus as we, our or us. The discussion of our business in this section reflects, on a pro forma basis, our anticipated merger with IgDraSol, Inc. pursuant to the option agreement described below. In addition, the IgDraSol option agreement, initial services agreement, asset purchase agreement and development services agreement are collectively referred to in this prospectus as the IgDraSol Transactions.

#### **Overview**

We are a biopharmaceutical company engaged in the discovery, acquisition, development and commercialization of proprietary drug therapeutics for addressing significant unmet medical needs in the United States, Europe and additional international markets. Our primary therapeutic focus is oncology but we are also developing therapeutic products for other indications, including inflammation, metabolic disorders, and infectious diseases.

Our proprietary G-MAB® fully-human antibody library platform was designed to facilitate the rapid identification and isolation of highly specific antibody therapeutic product candidates that bind to disease targets appropriate for antibody therapy.

On March 7, 2013, we entered into an exclusive option agreement with IgDraSol, Inc., or IgDraSol, a private company focused on developing oncologic agents for the treatment of metastatic breast cancer, or MBC, non-small cell lung cancer, or NSCLC, and other cancers. IgDraSol granted us an irrevocable option to acquire IgDraSol by means of an agreement and plan of merger, and was paid a non-refundable lump sum payment of \$200,000 in April 2013. IgDraSol's lead compound is Cynviloq, a micellar diblock copolymeric paclitaxel formulation drug product. Cynviloq is currently approved and marketed in several countries, including South Korea for MBC and NSCLC under the trade name Genexol-PM®.

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Our goal is to deliver innovative, highly effective and safe treatment options to patients throughout the world. By working closely with scientists, doctors, patient organizations and other health care specialists, we are committed to improving the lives of patients and assisting their caregivers in the fight against cancer, inflammatory and autoimmune diseases and other unmet medical needs.

### ***G-MAB® Fully Human Antibody Library Platform***

We believe our proprietary G-MAB® library is one of the industry's most diverse fully human antibody libraries. The theoretical diversity of our library has been calculated to be more than one quadrillion unique antibodies, making it, to our knowledge, the largest fully human antibody library available to pharmaceutical and biotechnology companies for drug discovery and development partnerships. Our objective is to leverage our library to develop both First-in-Class, or FIC, and/or Best-in-Class, or BIC, antibody drug candidates that we expect will possess greater efficacy and fewer side effects as compared to existing drugs.

We have experienced a high success rate when screening our diverse library to identify monoclonal antibodies, or mAbs, that have the potential to be used as drugs. Recently, we have selected several lead drug development candidates to advance into clinical trials in 2015, including anti-PD-L1 and anti-CCR2 mAbs.

The following is a chart of fully human mAbs we've derived from our G-MAB® library. It includes antibodies that bind to a wide range of targets, from small molecular weight antigens to large protein complexes antigens, such as G-Protein Coupled Receptors, or GPCRs, a difficult class of antigens to raise therapeutic antibodies against.

In addition to employing our G-MAB® library to identify novel therapeutic antibodies, we also plan to: (i) develop potent antibody-formulated drug conjugates, or AfDCs, in therapeutic areas like oncology, auto-immune diseases and infectious diseases, armed using our proprietary TOCOSOL® technology (a tocopheryl polyethylene glycol succinate (TPGS)-based drug formulation), and / or antibody drug conjugates, or ADCs, and (ii) create recombinant intravenous globulins, or rIVIG, for the treatment of certain auto-immune diseases as well as immunodeficiencies.

### ***Recent Developments IgDraSol Transactions and Cynviloq***

On March 7, 2013, we entered into an exclusive option agreement with IgDraSol. IgDraSol granted us an irrevocable option to acquire IgDraSol by means of an agreement and plan of merger, and was paid a non-refundable lump sum payment of \$200,000 in April 2013. The option must be exercised by the later of: (i) thirty (30) days after the receipt of the FDA End of Phase II meeting minutes for Cynviloq (the End of Phase II meeting is scheduled in July 2013), or (ii) September 30, 2013. If we exercise our option to acquire IgDraSol, we

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will immediately issue 76,199,198 shares of our common stock to the IgDraSol stockholders. If a specific regulatory milestone is achieved, we will issue an additional 32,656,799 shares of our common stock to the former IgDraSol stockholders. If we do not exercise our option to acquire IgDraSol, we will be required to invest \$500,000 in IgDraSol *pari passu* with other new investors of IgDraSol.

IgDraSol's lead compound is Cynviloq, a micellar diblock copolymeric paclitaxel formulation drug product. Cynviloq is currently approved and marketed in several countries, including South Korea for MBC and NSCLC under the trade name Genexol-PM®. IgDraSol obtained exclusive distribution rights for Cynviloq in the United States and 27 countries of the European Union, or EU, from Samyang Biopharmaceuticals Corporation, a South Korean corporation.

We entered into an initial services agreement dated March 7, 2013 with IgDraSol, wherein IgDraSol has provided certain product development and technology services related to antibody-based nanotherapeutics. In March 2013, IgDraSol was paid a non-refundable payment of \$1,000,000 and the related services were completed prior to May 31, 2013. There are no further obligations under the initial services agreement.

In addition, we entered into an asset purchase agreement with IgDraSol whereby we agreed to purchase all documentation, equipment, information and other know-how related to micellar nanoparticle technology encompassing Tocosol® and related technologies for a purchase price of \$1,210,000, which was paid in April 2013. Also in April 2013, we entered into a development services agreement with IgDraSol related to the development of Tocosol® and related technologies. We will pay IgDraSol up to \$3,000,000 for services provided.

## **Our Strategy**

Assuming the consummation of our planned acquisition of IgDraSol in the third quarter of 2013, our mission is to improve the lives of cancer patients and assist their caretakers by delivering innovative, targeted therapies that improve outcomes while reducing the undesirable side effects of many current therapies. We intend to pursue this initially through the potential approval, launch and marketing of Cynviloq. We believe we have assembled a strong scientific team with in-depth domain knowledge in the nanomedicine and therapeutic antibody fields. We are fostering an integrated, multidisciplinary model for drug discovery, clinical development, manufacturing and commercialization. Our strategy is to discover, acquire, develop, and commercialize proprietary drugs for significant unmet medical needs, with a focus on cancer therapeutics. The key elements to our long-term oncology business strategy are illustrated and described below:

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***Cynviloq is our next-generation oncolytic nanomedicine for effective tumor killing.*** Oncolytic agents are the predominant therapeutics for treating cancer patients, and paclitaxel is one of the most effective and widely used chemotherapeutic agents for multiple solid tumor indications. The first generation paclitaxel formulation, Taxol<sup>®</sup>, utilizes Cremophor, derived from castor oil, to solubilize paclitaxel. The second generation paclitaxel formulation, Abraxane<sup>®</sup>, utilizes human serum albumin, or HSA, to solubilize the paclitaxel in an injectable solution. We are developing a third generation injectable nanoparticle paclitaxel, Cynviloq<sup>™</sup>, that is both Cremophor-free and HSA-free. We believe our formulation offers a higher maximum tolerated dose, or MTD, for potential better efficacy, ease of administration, and may better enable personalized dosing regimens. We believe Cynviloq may provide cancer patients and oncology practitioners with a much needed alternative to the current paclitaxel-based chemotherapies and may offer the potential for improved patient outcomes. We intend to seek a partner to simultaneously develop a companion pharmacokinetic monitoring device to allow for personalized cancer therapy in combination with Cynviloq .

***G-MAB<sup>®</sup> provides us with specific therapeutic antibodies for effective cancer cell targeting and killing.*** Our proprietary G-MAB<sup>®</sup> human antibody library has provided us with potent fully human therapeutic mAbs against many valuable cancer targets. The individual mAbs discovered from our G-MAB<sup>®</sup> library potentially gives us a multitude of therapeutic options to target and attack cancer cells, including, but not limited to, antibody-dependent cellular cytotoxicity, or ADCC for direct cancer cell killing, immunomodulation of T cell activity in the tumor, anti-angiogenesis for cutting off blood supplies to the tumor, and antagonist suppression of cellular processes required for cancer cell proliferation and metastasis. In addition, we intend to utilize our G-MAB<sup>®</sup> library-derived antibodies as the foundation for the development of companion diagnostics.

***Antibody formulated drug conjugates (AfDC) and antibody drug conjugates (ADC) for targeted tumor killing.*** Combining our proprietary nanotechnology with our proprietary mAbs or biosimilar mAbs, we are in a position to generate proprietary ADCs and/or AfDCs with potentially better efficacy and safety profiles than currently available therapies. We have the exclusive worldwide rights to the TOCOSOL<sup>®</sup> paclitaxel-nanoparticle formulation, which we believe is well suited for conjugation with a targeting mAb to generate an AfDC candidate. There are few competitors in the oncology space that offer the combination of targeting proprietary mAb warheads with an oncolytic payload, such as TOCOSOL<sup>®</sup>-paclitaxel. By combining this proprietary nanomedicine formulation encapsulating an oncolytic agent with our mAbs, we are positioning ourselves to become a leader in providing innovative, BIC targeted cancer therapeutics.

***Combination therapy of oncolytic agents and therapeutic mAbs for cocktail-based tumor cell killing.*** There are a plethora of anti-cancer monotherapies available from many drug makers, including chemotherapeutics and therapeutic mAbs. There is a major trend to combine different monotherapies to attack cancer using different modes of action (MOA). Such combinations are often referred to as a cocktail treatment approach . We are positioned to develop both oncolytic agents for strong non-specific killing of tumor cells and therapeutic mAbs for specific targeted tumor killing. The mAbs provide an alternative MOA different from the oncolytic agents, such as anti-angiogenesis, in-tumor T cell activation, ADCC, etc. We believe we are well-positioned to provide such solutions by providing both modalities derived from our in-house, proprietary oncolytic and mAb therapeutics as proprietary combination therapies. Many of our competitors may have to collaborate to combine their existing drugs with other company s drugs in order to develop combination therapies. Cynviloq is well suited to be combined with our proprietary anti-angiogenesis mAbs and immunomodulatory mAbs to offer cancer patients with desirable anti-cancer cocktail treatments.

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Assuming the consummation of our planned acquisition of IgDraSol in the third quarter of 2013, we are advancing toward our goal of bringing new therapeutic options to patients and planning to continue to leverage the broad potential of our G-MAB<sup>®</sup> fully human antibody library. In the near term, we expect to:

- advance IgDraSol's late-stage, oncolytic drug candidate Cynviloq towards registration trials for multiple solid tumor cancer indications,
- progress selected drug development candidates from our proprietary G-MAB<sup>®</sup> fully human antibody library into clinical trials in 2015, including fully-human anti-PD-L1, anti-PD-1, and anti-CCR2 mAbs,
- develop AfDCs using our nanoparticle formulation (Tocosol<sup>®</sup> and/or related technologies) or ADCs,
- create rIVIG, using our proprietary G-MAB<sup>®</sup> fully human antibody library, and
- pursue combination therapies using Cynviloq and our proprietary fully-human mAbs.

Although we intend to retain ownership and control of some product candidates by advancing them further into preclinical or clinical development, we will also consider partnerships with pharmaceutical or biopharmaceutical companies in order to balance the risks associated with drug discovery and development and maximize our stockholders' returns. Our partnering objectives include generating revenue through license fees, milestone-related development fees and royalties by licensing rights to our product candidates.

## **Product Candidates**

We, through IgDraSol, currently have one late-stage oncology drug candidate, Cynviloq, in clinical development for multiple solid tumor indications. We are currently planning for registration trials pending the outcome of our planned End of Phase II meeting with the FDA in July 2013. Additionally, we have multiple mAb product candidates in preclinical development, such as our fully human anti-PD-L1 mAbs, anti-PD-1 mAbs, and anti-CCR2 mAbs, and a discovery effort advancing additional therapeutic mAb drug candidates. We believe these mAb product candidates, individually, as AfDC, as ADC, or as combination therapy, have the potential to address major unmet medical needs.

\* Subject to EOP2 meeting with FDA scheduled in July 2013 and subject to FDA approval of Abraxane<sup>®</sup> for pancreatic cancer.

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### **Cynviloq**

Cynviloq was secured by IgDraSol through an exclusive distribution agreement, as amended, for the United States and 27 countries of the EU, with Samyang Biopharmaceutical Corporation, a South Korean corporation, or Samyang. Cynviloq is currently approved and marketed by Samyang in South Korea for MBC, NSCLC and ovarian cancer, under the trade name Genexol-PM<sup>®</sup>. Cynviloq is also marketed in the Philippines, Vietnam, and India. Cynviloq consists of paclitaxel encapsulated within a polylactide and polyethylene glycol diblock copolymer micelle. A micelle is an aggregate of surfactant molecules, having hydrophobic and hydrophilic parts, in which the hydrophilic heads form the outside shell of the sphere with the hydrophobic tails at the center of the core. This hydrophobic core is able to effectively encapsulate hydrophobic drugs, such as paclitaxel.

Cynviloq has been clinically tested in over 900 patients in the United States, Russia, and South Korea in Phase I, Phase II, and Phase III clinical trials, and post-marketing surveillance studies in MBC, NSCLC, ovarian, pancreatic and bladder cancer. Cynviloq has demonstrated comparable clinical efficacy and tolerability compared to historical albumin-bound paclitaxel (*nab*-paclitaxel; Abraxane<sup>®</sup>/Celgene Corporation) clinical data. Samyang is currently conducting an ongoing open-label Phase III MBC study in South Korea, randomizing patients with recurrent or advanced MBC to Cynviloq using a dosing regimen of 260mg/m<sup>2</sup> every 3 weeks, or q3w, as compared to Cremophor-paclitaxel (Taxol<sup>®</sup>) given at a standard 175 mg/m<sup>2</sup> q3w dose. Interim results have shown statistically significant improvement in the objective response rate (ORR) with Cynviloq when compared to Taxol<sup>®</sup>. We believe the superior ORR for Cynviloq versus Taxol<sup>®</sup> is comparable to data generated from the pivotal registration studies submitted for Abraxane<sup>®</sup> that was the basis for Abraxane<sup>®</sup>'s approval in the United States and in China for the MBC indication.

### ***Cynviloq Differentiation versus Taxol<sup>®</sup> and Abraxane<sup>®</sup>***

Paclitaxel is a water insoluble drug that requires a solvent formulation. The first generation paclitaxel formulation, Taxol<sup>®</sup>; developed by Bristol-Myers-Squibb, or BMS, utilizes a Cremophor solvent, a castor oil-based emulsion. Known dose-limiting toxicities of Cremophor restrict the overall dose of Taxol<sup>®</sup> that can be safely administered to patients. Cremophor also causes the entrapment of paclitaxel in the bloodstream, thereby allowing less freely-available paclitaxel to reach the tumor sites. Furthermore, patients receiving Taxol<sup>®</sup> require pre-medication with steroids and antihistamines to allay the toxic side effects associated with Cremophor.

Abraxane<sup>®</sup> is a second generation paclitaxel formulation that utilizes a biological polymer, namely donor-derived HSA to encapsulate paclitaxel. Abraxane<sup>®</sup> does not contain the Cremophor solvent and thus, enables administration of ~50% more paclitaxel than with Taxol<sup>®</sup>.

Cynviloq is a next generation paclitaxel formulation comprised of paclitaxel encapsulated in a non-biological polymeric micelle composed of a polylactide and polyethylene glycol diblock copolymers resulting in an injectable suspension of paclitaxel. This polymeric micelle formulation of paclitaxel achieves an increased MTD of paclitaxel of potentially greater than 300 mg/m<sup>2</sup>. This is significantly greater than the MTDs of Taxol<sup>®</sup> (175 mg/m<sup>2</sup>) and Abraxane<sup>®</sup> (260 mg/m<sup>2</sup>). We believe Cynviloq is easier to prepare and administer for clinical practices, and has no special storage requirements in contrast to Abraxane<sup>®</sup>. Cynviloq also avoids certain biohazardous safety issues, such as potential prion or viral contamination and subsequent transmission that could be associated with the use of donor-derived HSA required for the Abraxane<sup>®</sup> formulation.

### ***Clinical Strategy: Basis for bioequivalence***

Cynviloq utilizes a proprietary, non-biological, chemical polymeric-micellar nanoparticle technology to solubilize paclitaxel. This is a different formulation from Abraxane<sup>®</sup>, where paclitaxel is solubilized in HSA nanoparticles. Particle dissociation studies comparing Abraxane<sup>®</sup> and Cynviloq have shown that both formulations rapidly disintegrate under physiologically-relevant conditions, suggesting that both formulations



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release their paclitaxel payloads shortly after intravenous administration. Our analysis of pharmacokinetic (PK) data (see table below) from three Phase I trials with Cynviloq, suggests Cynviloq is bioequivalent to Abraxane under the FDA's bioequivalence (BE) guidance. Both paclitaxel formulations showed substantially identical PK parameters at the approved Abraxane dose range of 100-260 mg/m<sup>2</sup> paclitaxel (administered intravenously over 30 minutes). If we receive the FDA's concurrence, we plan to utilize a 505(b)(2) new drug application, or NDA, submission process to show the BE of Cynviloq as compared to Abraxane.

We believe the following analysis demonstrates BE between Cynviloq and Abraxane:

1. Large volume of distribution (suggestive of rapid tissue penetration),
2. Dose proportional PK profile of doses ranging up to 350 mg/m<sup>2</sup>,
3. Similar PK parameters at 135 mg/m<sup>2</sup> dose level for Abraxane (Ibrahim, 2002) and Cynviloq (Study GXLPM-01) both infused over 180 minutes.

**Cynviloq vs Abraxane PKs at 135 mg/m<sup>2</sup> on a 3 hr Infusion Regimen**

	<b>Cmax</b>	<b>AUC inf</b>	<b>T1/2 (hr)</b>	<b>CL (L/hr/m2)</b>
	(ng/mL)	(ng/mL*h)		
Cynviloq	1357	5473	12.7	25.5
Abraxane®	1392	5654	12.9	27.4

4. Overlapping 95% confidence interval (CI) for AUCinf/D, T1/2, CL, and Vz. There were 78 patients in the Abraxane dataset, and 32 patients in the Cynviloq dataset.
5. When the Cynviloq infusion was performed over 60 minutes instead of 180 minutes, the ranges for AUCinf/D, T1/2 and Vz overlapped with 95% CI of both Abraxane and Cynviloq, suggesting that a shorter infusion time does not negatively impact Cynviloq PK properties as predicted by simulation modeling.

**Cynviloq vs Abraxane- Dose Adjusted PK Parameters**

	<b>Infusion</b>	<b>AUCinf/D</b>	<b>T1/2</b>	<b>CL</b>	<b>Vz</b>
	<b>Time</b>	<b>(ng/hr/mL/D)</b>	<b>(hr)</b>	<b>(L/hr/m2)</b>	<b>(L/m2)</b>
		Mean (95% confidence interval)			
Abraxane®	30 min	53	17	22	536
(N=14)		(20-86)	(10-24)	(11-33)	(145-928)
Cynviloq	180 min	48	14	25	631
(N = 9)		(11-84)	(8-19)	(9-40)	(252-1010)
Cynviloq *	60 min				
(N = 7)		(26-61)	(6.0-18.6)		(249-1512)

\* Lim, et al, 2009, the AUC, T1/2, CL or Vz were not reported.

6. PK studies were initially conducted using a 180 minute infusion administration of Cynviloq, the same administration schedule as Taxol, which was the only approved comparator product available when Genexol-PM was approved (Studies GPMP1 and SAY00101US). The approved dosage administration for Abraxane is a 30 minute infusion time. A simulation analysis of Cynviloq administered in a 30 minute infusion time is shown in the table below. The simulated data were compared to historical data for Abraxane to assess similarity (point estimates) for AUC0-t and AUCinf between Cynviloq and Abraxane (Study Camargo1).

<b>Simulated mean PK Parameter Values after Administration of 260 mg/m<sup>2</sup> Cynviloq in 30 minutes and Summary of Abraxane's PK Parameter Values</b>			
		<b>Point Estimate for</b>	<b>Point Estimate for</b>
<b>Cmax</b>	<b>AUC<sub>inf</sub></b>	<b>Cmax</b>	<b>AUC<sub>inf</sub></b>
<b>(ng/mL)</b>	<b>(ng hr/mL)</b>	<b>(Difference in %)</b>	<b>(Difference in %)</b>
19486	22198	0.36	9.22
19556	20324		

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Manufacturers can obtain FDA approval of NDAs for new formulations of approved drugs with the same active pharmaceutical ingredient (API) using an FDA 505(b)(2) BE application process. The 505(b)(2) BE application process relies, in part, on the FDA's findings for a prior approved drug. This avoids costly and time consuming clinical trials. We believe this process might apply to Cynviloq as paclitaxel is the approved API for both of the Abraxane<sup>®</sup> and Taxol<sup>®</sup> formulations. According to the Section 505(b)(2) guidelines, an NDA approval can be obtained for a new drug without conducting the full complement of safety and efficacy trials and without a right of reference from the original applicant. In cases where different formulations of the same API are found to be bioequivalent, a BE trial comparing the PK parameters (C<sub>max</sub> and AUC) of both drugs may be sufficient to obtain FDA approval. The Draft Guidance (September 2012) for *nab*-paclitaxel (Abraxane<sup>®</sup>) states that measurements of both total and unbound paclitaxel should be made to establish BE. Given that both Cynviloq and Abraxane<sup>®</sup> release free paclitaxel upon intravenous administration, we believe that this is an appropriate method of comparison for marketing approval.

In July 2013, IgDraSol will meet with the FDA to discuss, among other items, using a FDA 505(b)(2) BE application process for Cynviloq on the basis of BE versus Abraxane<sup>®</sup> as the reference drug. If the FDA concurs with our approach, we plan to initiate a BE trial as well as a Phase III bladder trial. We are also considering other cancer trials. Subject to the FDA's concurrence, a single BE trial is planned to treat MBC patients with Abraxane<sup>®</sup> in the first cycle and then with Cynviloq (or vice versa) in the next cycle in a cross-over trial designed to use the patients as their own controls to measure the PK parameters between the two drug formulations, and thus establish BE.

Subject to the FDA's concurrence and our conducting the BE trial, an NDA filing under 505(b)(2) is expected to be completed in the first half of 2015, with potential approval in the first half of 2016. If Cynviloq and Abraxane<sup>®</sup> are found to be bioequivalent and FDA approval is granted, Cynviloq will receive the same label indications as Abraxane<sup>®</sup>, including MBC and NSCLC, in addition to potentially other future indications for which Abraxane<sup>®</sup> may be approved, such as advanced pancreatic cancer (upon expiration of Abraxane<sup>®</sup>'s marketing exclusivity). Subject to the FDA's concurrence, a Phase III registration trial for Cynviloq as second-line treatment for bladder cancer as compared to the best supportive care (BSC) is planned as a sNDA application, with approval targeted in 2017.

**Market Opportunity****Cynviloq**

According to the 2012 IMS NSP, the taxane market in the United States is estimated to be one billion dollars in 2012, and is comprised of Abraxane<sup>®</sup>, generic paclitaxel (Taxol<sup>®</sup>; BMS) and generic docetaxel (Taxotere<sup>®</sup>; Sanofi-Aventis). Abraxane<sup>®</sup> had approximately 40% market share in the United States in 2012. In the rest of the world, the taxane market is estimated to be worth at least \$2.4 billion, driven primarily by sales of generic paclitaxel and docetaxel, with Abraxane<sup>®</sup> sales of approximately \$90 million. Taxanes are one of the most widely used chemotherapies in the world and play a significant role in the treatment of various solid tumors, including breast, lung, prostate and ovarian cancers. Taxanes are often the standard of care as monotherapy or in combination with other chemotherapy or biological agents when used in the metastatic setting, although it also being used in the adjuvant/neo-adjuvant settings as well. Historically, taxanes were rarely used in pancreatic cancer. However, the survival benefit seen in the MPACT study combining Abraxane<sup>®</sup> with gemcitabine is predicted to become the standard of care, replacing gemcitabine monotherapy in this highly aggressive tumor with limited treatment options.

**MBC<sup>1</sup>**

It is estimated that over 230,000 new cases of invasive breast cancer will be diagnosed among women in the United States during 2013, along with over 2,000 new cases in men. Excluding skin cancers, breast cancer is the most frequently diagnosed cancer in women. An estimated 40,000 breast cancer deaths are expected in 2013. Breast cancer ranks second as a cause of cancer death in women, after lung cancer. Taking into account tumor

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size, extent of spread, and other characteristics, as well as patient preference, treatment usually involves breast-conserving surgery (surgical removal of the tumor and surrounding tissue) or mastectomy (surgical removal of the breast). Treatment may also involve radiation therapy, chemotherapy (before or after surgery), hormone therapy (e.g., selective estrogen response modifiers, aromatase inhibitors, ovarian ablation), and/or targeted therapy. Postmenopausal women, with early stage breast cancer, that test positive for hormone receptors may benefit from treatment with an aromatase inhibitor (e.g., letrozole, anastrozole, or exemestane) or tamoxifen. For women whose cancer tests positive for HER2/neu, approved targeted therapies include trastuzumab (Herceptin<sup>®</sup>; Genentech), and, for advanced disease, lapatinib (Tykerb<sup>®</sup>; GSK), and pertuzumab (Perjeta<sup>®</sup>; Genentech). In February 2013, the United States FDA approved Kadcyla<sup>®</sup> (ado-trastuzumab emtansine) from Roche-Genentech, a new therapy for patients with HER2-positive, late-stage MBC. Kadcyla<sup>®</sup> is an ADC product with trastuzumab as the targeting warhead and the anti-tubulin toxin DM1 as the payload. Kadcyla<sup>®</sup> is intended for patients who were previously treated with trastuzumab, another anti-HER2 therapy, and taxanes. The safety and effectiveness of Kadcyla were evaluated in a clinical study of 991 patients randomly assigned to receive Kadcyla<sup>®</sup> or lapatinib plus capecitabine (Xeloda<sup>®</sup>; Roche-Genentech). Results showed that patients treated with Kadcyla<sup>®</sup> had a median progression-free survival of 9.6 months compared to 6.4 months in patients treated with lapatinib plus capecitabine. The median overall survival was 30.9 months in the Kadcyla group and 25.1 months in the lapatinib plus capecitabine group.

In 2012, approximately 330,000 patients diagnosed with breast cancer were treated with drugs in the United States and the top five (5) EU countries (Germany, France, Italy, Spain, United Kingdom). Half of these patients live in the United States, and approximately 100,000 of these patients were treated in the advanced or metastatic settings in first, second or third-line therapy. The National Comprehensive Cancer Network (NCCN) treatment guidelines list of preferred single agent drugs include paclitaxel & paclitaxel albumin-bound (Abraxane<sup>®</sup>), among other drugs, for the treatment of patients with Stage IV advanced breast cancer. Preferred combination chemotherapy agents include among others paclitaxel plus Herceptin, paclitaxel plus gemcitabine, Herceptin<sup>®</sup> plus paclitaxel & carboplatin and Perjeta<sup>®</sup> plus Herceptin<sup>®</sup> & paclitaxel. It is estimated that about 25-30% of all patients treated in MBC received a paclitaxel-based regimen. In addition, paclitaxel in combination with other targeted therapies are recommended in neo-/adjuvant breast cancer treatment as well.

**Lung cancer<sup>1</sup>**

In the United States, lung cancers are expected to represent approximately 14% of new cancer diagnoses, or an estimated 223,000 new cases in 2013. Lung cancer accounts for more deaths than any other cancer in both men and women. An estimated 160,000 deaths, accounting for about 27% of all cancer deaths, are expected in 2013.

Lung cancer is classified as small cell (15%) or non-small cell (84%) for the purposes of treatment. Based on type and stage of cancer, treatments include surgery, radiation therapy, chemotherapy, and targeted therapies such as bevacizumab (Avastin<sup>®</sup>/Roche-Genentech), erlotinib (Tarceva<sup>®</sup>), and crizotinib (Xalkori<sup>®</sup>). Advanced-stage non-small cell lung cancer patients are usually treated with chemotherapy, targeted drugs, or some combination of the two. Approximately 134,000 patients with locally advanced or metastatic Stage IIIB/IV NSCLC were diagnosed in the United States last year. Approximately 70% of these patients were treatment eligible. The NCCN's list of systemic therapy for advanced or metastatic NSCLC includes paclitaxel and Abraxane<sup>®</sup>, among other recommendations. Paclitaxel is often used in combination with a platinum agent (carboplatin or cisplatin). It is estimated that about a third of patients treated in the first-line and second-line settings received a paclitaxel-based therapy.

**Ovarian cancer<sup>1</sup>**

Approximately 48,500 women were diagnosed with ovarian cancer last year in the United States and the top 5 EU countries. More than 70% of women diagnosed with ovarian cancer will present with advanced disease, and up to 80% of them will experience disease recurrence and eventually die from this disease. Treatment includes surgery and usually chemotherapy. Among patients with early ovarian cancer, complete surgical staging has been

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associated with better outcomes. For women with advanced disease, surgically removing all abdominal metastases larger than one centimeter (debulking) enhances the effect of chemotherapy and helps improve survival. For women with stage III ovarian cancer that has been optimally debulked, studies have shown that chemotherapy administered both intravenously and directly into the abdomen (intraperitoneally) improves overall survival, or OS.

In 2012 in the United States and the top 5 EU countries, approximately 36,000 patients were treated with front-line chemotherapy, and approximately 17,000 patients were treated with second-line chemotherapy. Paclitaxel in combination with a platinum compound plays a significant role in the treatment of ovarian cancer with the NCCN recommending taxanes plus platinum to be used in both the adjuvant and metastatic settings. It is estimated that 75% of the patients treated in the United States, in 2012, were treated with paclitaxel-based chemotherapy as front-line therapy.

### **Pancreatic cancer<sup>1</sup>**

Even though pancreatic cancer is a relatively uncommon form of cancer making up only 2.1% cancer cases it is one of the leading causes of cancer related deaths, killing around 38,000 people in the United States each year. It is one of the most difficult forms of cancer to treat, especially as it is usually detected at very late stages. It is estimated that around 65,000 patients were diagnosed with pancreatic cancer (mainly adenocarcinoma) in the United States and the top 5 EU countries. In 2013, an estimated 45,000 new cases of pancreatic cancer will be diagnosed in the United States. Pancreatic cancer accounts for about 7% of all cancer deaths and ranks fourth as a cause of cancer death among both men and women in the United States. In 2013, an estimated 38,000 people are expected to die from pancreatic cancer in the United States. The treatment choice is largely determined by whether the tumor can be surgically removed. Surgery remains the only treatment that offers a chance of cure for pancreatic cancer patients. Approximately 20% of all pancreatic cancer patients are candidates for surgery.

Approximately 56,000 of patients with pancreatic cancer were treated in the first-line setting in the United States and top 5 EU countries, with the United States accounting for 27,000 of these patients. Another 26,000 patients were treated in the second-line setting in the United States and top 5 EU countries, with the United States accounting for 15,000 of these patients. Gemcitabine- and fluoro-pyrimidine based therapy are the standard of care both in the adjuvant and metastatic settings. The NCCN recommendation for patients with unresectable, locally advanced or metastatic adenocarcinoma of the pancreas includes Abraxane<sup>®</sup> plus gemcitabine, gemcitabine (Gemzar<sup>®</sup>/Lilly) monotherapy, or in combination with erlotinib (Tarceva<sup>®</sup>/Astellas), folfinirox, capecitabine (Xeloda<sup>®</sup>/Roche-Genentech) or fluorouracil (Efudex/Valeant) as a continuous infusion. Last year, before the results of the MPACT study with Abraxane<sup>®</sup> plus gemcitabine data were reported, approximately 65% of patients were treated with gemcitabine-based regimens in first-line settings, and 30% of patients were treated with gemcitabine-b