

LA JOLLA PHARMACEUTICAL CO

Form 424B2

March 20, 2017

Table of Contents

The information in this preliminary prospectus supplement is not complete and may be changed. This preliminary prospectus supplement and the accompanying prospectus do not constitute an offer to sell these securities, and we are not soliciting offers to buy these securities, in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MARCH 20, 2017

**Filed pursuant to Rule 424(b)2
Registration No. 333-214721**

PROSPECTUS SUPPLEMENT

(To Prospectus dated December 8, 2016)

\$100,000,000

Common Stock

We are offering \$100,000,000 of our common stock. Our common stock is currently listed on The NASDAQ Capital Market under the symbol LJPC. On March 17, 2017, the last reported sale price of our common stock was \$35.88 per share.

Investing in our common stock involves a high degree of risk. Please read Risk Factors beginning on page S-5 of this prospectus supplement and in the documents incorporated by reference into this prospectus supplement for a discussion of the factors you should carefully consider before deciding to purchase shares of our common stock.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities, or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	PER SHARE	TOTAL
Public Offering Price	\$	\$
Underwriting Discounts and Commissions ⁽¹⁾	\$	\$
Proceeds to La Jolla Pharmaceutical Company, Before Expenses	\$	\$

(1) We refer you to Underwriting beginning on page S-9 for additional information regarding underwriting discounts and commissions.

Delivery of the shares of common stock is expected to be made on or about _____, 2017. We have granted the underwriters an option for a period of 30 days to purchase up to an additional _____ shares of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be \$ _____ and the total proceeds to us, before expenses, will be \$ _____.

Joint Book-Running Managers

J.P. Morgan

Prospectus Supplement dated

Cowen and Company

, 2017.

Table of Contents**Table of Contents**

	PAGE
Prospectus Supplement	
<u>About This Prospectus Supplement</u>	S-iii
<u>Cautionary Statement about Forward-Looking Information</u>	S-iv
<u>Prospectus Summary</u>	S-1
<u>The Offering</u>	S-4
<u>Risk Factors</u>	S-5
<u>Use of Proceeds</u>	S-6
<u>Dilution</u>	S-7
<u>Underwriting</u>	S-9
<u>Legal Matters</u>	S-18
<u>Experts</u>	S-18
<u>Where You Can Find More Information</u>	S-18
<u>Incorporation of Certain Information by Reference</u>	S-19

Prospectus

<u>About This Prospectus</u>	1
<u>Special Note Regarding Forward-Looking Statements</u>	2
<u>About the Company</u>	3
<u>Risk Factors</u>	4
<u>Use of Proceeds</u>	5
<u>Ratio of Earnings to Fixed Charges</u>	6
<u>Securities We May Offer</u>	7
<u>Plan of Distribution</u>	14
<u>Experts</u>	17
<u>Legal Matters</u>	17
<u>Where You Can Find Additional Information</u>	17
<u>Incorporation of Certain Information by Reference</u>	18

You should rely only on the information contained in or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectus that we have authorized for use in connection with this offering. We have not, and the underwriters have not, authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in the accompanying prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in the accompanying prospectus, and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents incorporated by reference herein under the caption **Incorporation of Certain Information by Reference** and to which we have referred you under the caption **Where You Can Find More Information**.

Table of Contents

About This Prospectus Supplement

This prospectus supplement and the accompanying prospectus each form a part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a shelf registration process. This prospectus supplement provides you with specific information about this offering. The accompanying prospectus, including the documents incorporated by reference therein, provides more general information, some of which may not apply to this offering. Generally, when we refer only to the prospectus, we are referring to both parts combined. This prospectus supplement may add, update or change information contained in the accompanying prospectus and the documents incorporated by reference therein. To the extent that any statement we make in this prospectus supplement is inconsistent with statements made in the accompanying prospectus or any documents incorporated by reference herein or therein, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying prospectus and such documents incorporated by reference herein and therein.

In this prospectus supplement, La Jolla, the Company, we, us, and our and similar terms refer to La Jolla Pharmaceutical Company. References to our common stock refer to the common stock of La Jolla Pharmaceutical Company.

All references in this prospectus supplement to our financial statements include, unless the context indicates otherwise, the related notes.

The industry and market data and other statistical information contained in this prospectus supplement, the accompanying prospectus and the documents we incorporate by reference are based on management's own estimates, independent publications, government publications, reports by market research firms or other published independent sources, and, in each case, are believed by management to be reasonable estimates. Although we believe these sources are reliable, we have not independently verified the information.

Table of Contents

Cautionary Statement about Forward-Looking Information

This prospectus supplement, the accompanying prospectus, and the documents incorporated by reference herein contain forward-looking statements within the meaning of the federal securities laws. You can identify forward-looking statements by the use of the words believe, expect, anticipate, intend, estimate, project, will, may, plan, intend, assume and other expressions (including their use in the negative) that predict or indicate future events and trends, including our future financial performance, and that do not relate to historical matters.

Such statements include, but are not limited to, statements about: our ability to successfully develop LJPC-501, LJPC-401, LJPC 30S and our other product candidates (collectively our product candidates); the timing of the planned NDA submission for LJPC-501 and prospects for regulatory approval of LJPC-501; uncertainty relating to the scope of product labels (if approved) and potential market size; as well as the broader commercial opportunity for our product candidates; the future success of our clinical studies with our product candidates; the timing for the commencement and completion of clinical studies; and our ability to obtain orphan status, break-through status, other regulatory designations or additional patent protection with respect to any of our product candidates.

Forward-looking statements are neither historical facts nor assurances of future performance.

Forward-looking statements are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements.

Important factors that could cause our actual results and financial condition to differ materially from those anticipated in the forward-looking statements include, among others:

risks that the full data set from the ATHOS-3 study will not be consistent with the top-line results of the study;

risks relating to our dependence on LJPC-501, including filing for marketing approval in the United States, Europe and elsewhere;

risks relating to the degree of market acceptance of LJPC-501 (if approved), including by physicians, patients, third-party payors and others in the medical community;

risks relating to our limited assets and need to raise additional capital before we can expect to become profitable;

risks relating to the establishment of a sales and marketing organization and successfully commercializing LJPC-501 (if approved);

risks relating to the successful completion of clinical studies and risks regarding the sufficiency of clinical studies involving our product candidates, including whether positive results are sufficient to support approval;

the successful and timely completion of clinical studies;

uncertainties associated with obtaining and enforcing patent rights;

risks relating to our reliance on third parties, including third-party manufacturers and clinical research organizations;

S-iv

Table of Contents

risks regarding our ability to comply fully with laws affecting our current and planned business operations, including healthcare laws, privacy laws and laws regarding foreign payments;

pricing risks for our drug candidates and risks relating to potential changes in laws affecting the healthcare system in the United States and abroad; and

risks relating to our reliance on certain key employees.

In addition, the factors described under the section captioned "Risk Factors" in this prospectus supplement and the accompanying prospectus, as may be updated from time to time by our future filings under the Securities Exchange Act of 1934, and elsewhere in the documents incorporated by reference in this prospectus supplement, may result in these differences. You should carefully review all of these factors.

We qualify all of the forward-looking statements herein by these cautionary statements. The forward-looking statements were based on information, plans and estimates at the date of this prospectus supplement, the accompanying prospectus or the documents incorporated by reference therein, as applicable, and we assume no obligation to update any forward-looking statements to reflect changes in underlying assumptions or factors, new information, future events or other changes. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements.

S-v

Table of Contents

Prospectus Summary

*The following summary of our business highlights certain of the information contained elsewhere in or incorporated by reference into this prospectus supplement and the accompanying prospectus. Because this is only a summary, however, it does not contain all of the information that may be important to you. You should carefully read this prospectus supplement and the accompanying prospectus, including the documents incorporated by reference, which are described under *Where You Can Find More Information* and *Information Incorporated By Reference* in this prospectus supplement and the accompanying prospectus. You should also carefully consider the matters discussed in the section in this prospectus supplement titled *Risk Factors* and in the accompanying prospectus and in other periodic reports incorporated herein by reference.*

Our Company

La Jolla Pharmaceutical Company is a biopharmaceutical company focused on the discovery, development and commercialization of innovative therapies intended to significantly improve outcomes in patients suffering from life-threatening diseases. We have several product candidates in development. LJPC-501 is our proprietary formulation of synthetic human angiotensin II for the potential treatment of catecholamine resistant hypotension. LJPC-401 is our proprietary formulation of synthetic human hepcidin for the potential treatment of conditions characterized by iron overload, such as hereditary hemochromatosis, beta thalassemia, sickle cell disease and myelodysplastic syndrome. LJPC-30S is our next-generation gentamicin derivative program that is focused on the potential treatment of serious bacterial infections as well as rare genetic disorders, such as cystic fibrosis and Duchenne muscular dystrophy.

Our common stock is currently listed on The NASDAQ Capital Market under the symbol LJPC.

Program Overview

LJPC-501

LJPC-501 is our proprietary formulation of synthetic human angiotensin II. Angiotensin II, a major bioactive component of the renin-angiotensin system, serves as one of the body's central regulators of blood pressure. We are developing LJPC-501 for the treatment of patients with catecholamine resistant hypotension (CRH). LJPC-501 is the first synthetic human angiotensin II product candidate to be tested in a Phase 3 clinical study.

CRH is a life-threatening syndrome in patients with distributive shock (dangerously low blood pressure with adequate cardiac function) who cannot achieve target mean arterial pressure (MAP) despite adequate fluid resuscitation and treatment with currently available vasopressors (catecholamines and/or vasopressin). Angiotensin II has been shown to raise blood pressure in a pilot, randomized, placebo-controlled clinical study in CRH, which was published in the *Journal of Critical Care*. We have conducted preclinical pharmacology studies that have demonstrated that catecholamine resistance may be in part a result of reduced endogenous production of angiotensin II. In October 2014, we presented positive data from a preclinical study of LJPC-501 for the treatment of CRH.

We initiated a Phase 3 study of LJPC-501 for the treatment of CRH, called ATHOS-3 (Angiotensin II for the Treatment of High-Output Shock). Prior to commencing the ATHOS-3 study, we reached agreement with the U.S. Food and Drug Administration (FDA), on a Special Protocol Assessment (SPA) for this multicenter, randomized, double-blind, placebo-controlled, Phase 3 clinical study. In accordance with the SPA, the primary efficacy endpoint for the ATHOS-3 registration study is the percentage of patients achieving pre-specified target blood pressure response at three hours. In the ATHOS-3 study, patients were randomized in a 1:1 fashion to receive either:

(i) LJPC-501 plus standard-of-care vasopressors; or (ii) placebo plus standard-of-care vasopressors. Randomized patients received their assigned treatment via continuous intravenous (IV) infusion for up to seven days. The primary efficacy endpoint in the study was to compare the percentage of CRH patients

S-1

Table of Contents

achieving a mean arterial pressure (MAP) ³ 75 mmHg or a 10 mmHg increase from baseline MAP at three hours following the initiation of study treatment without an increase in standard-of-care vasopressors. The key secondary efficacy endpoint was a comparison of changes in the cardiovascular (CV) Sequential Organ Failure Assessment (SOFA) score. In addition, the safety and tolerability of LJPC-501 in patients with CRH was assessed.

In February 2017, we reported positive top-line results from the ATHOS-3 study. The analysis of the primary efficacy endpoint, defined as the percentage of patients achieving a pre-specified target blood pressure response, was highly statistically significant: 23% of the 158 placebo-treated patients had a blood pressure response compared to 70% of the 163 LJPC-501-treated patients ($p < 0.00001$). In addition, a trend toward longer survival was observed: 22% reduction in mortality risk through day 28 [hazard ratio=0.78 (0.57-1.07), $p=0.12$] for LJPC-501-treated patients.

We expect to file a New Drug Application (NDA) with the FDA, for LJPC-501 before the end of 2017.

LJPC-401

LJPC-401 is our proprietary formulation of synthetic human hepcidin. Hepcidin, an endogenous peptide hormone, is the body's naturally occurring regulator of iron absorption and distribution. In healthy individuals, hepcidin prevents excessive iron accumulation in vital organs, such as the liver and heart, where it can cause significant damage and even result in death.

We are developing LJPC-401 for the potential treatment of iron overload, which occurs as a result of diseases such as hereditary hemochromatosis (HH), beta thalassemia, sickle cell disease (SCD) and myelodysplastic syndrome (MDS). HH is a disease characterized by a deficiency in hepcidin production resulting in excessive iron accumulation. HH is the most common genetic disease in Caucasians and causes liver cirrhosis, liver cancer, heart disease and/or failure, diabetes, arthritis and joint pain. Beta thalassemia, SCD and MDS are genetic diseases of the blood that can cause life-threatening anemia and usually require frequent and life-long blood transfusions. These blood transfusions cause excessive iron accumulation in the body, which is toxic to vital organs, such as the liver and heart. In addition, the underlying anemia causes excessive iron accumulation independent of blood transfusion.

In September 2016, we reported positive results from a Phase 1 study of LJPC-401 in patients at risk of iron overload as a consequence of HH, beta thalassemia and SCD. Single, escalating doses of LJPC-401 were associated with a dose-dependent, statistically significant reduction in serum iron. LJPC-401 was well tolerated with no dose-limiting toxicities. Injection-site reactions were the most commonly reported adverse event and were all mild or moderate in severity, self-limiting, and fully resolved.

Also in September 2016, we announced that we reached agreement with the European Medicines Agency (EMA) on the design of a pivotal study of LJPC-401. The pivotal study will be a randomized, controlled, multi-center study in beta thalassemia patients suffering from iron overload, a major unmet need in an orphan patient population. The primary endpoint will be a clinically relevant measurement directly related to iron overload. We plan to initiate this study in mid-2017. In 2015, the EMA Committee for Orphan Medicinal Products (COMP) designated LJPC-401 as an orphan medicinal product for the treatment of beta thalassemia intermedia and major. In 2016, the EMA COMP designated LJPC-401 as an orphan medicinal product for the treatment of SCD.

LJPC-30S

LJPC-30S is our next-generation gentamicin derivative program. Despite kidney toxicity, gentamicin has become one of the most commonly prescribed hospital antibiotics due to its broad spectrum of antimicrobial efficacy. Gentamicin consists primarily of a mixture of at least four distinct but closely related chemical entities that may contribute

differentially to the product's toxicity profile.

S-2

Table of Contents

Our LJPC-30S program is focused on therapeutics derived from purified components of the currently marketed gentamicin product that retain the biologic activity of gentamicin, yet appear to lack the traditional kidney toxicity associated with its use. This program includes the development of potential treatments for serious bacterial infections as well as rare genetic disorders, such as cystic fibrosis and Duchenne muscular dystrophy.

Gentamicin's ability to induce a lack of fidelity in gene transcription, intrinsic to its antimicrobial mechanism of action, can also be leveraged in the correction of certain human genetic mutations that are the hallmark of diseases such as cystic fibrosis and Duchenne muscular dystrophy. In spite of favorable short-term clinical proof-of-efficacy data in cystic fibrosis, development of gentamicin as a chronic treatment for these genetic diseases has been limited by its toxicity profile.

Following a pre-investigational new drug, or IND, meeting with the FDA, we have received guidance that we may proceed with a proposed Phase 1 study following the submission of an IND application.

Patents and Proprietary Technologies

As of December 31, 2016, we owned or had the rights to 31 issued patents (19 U.S. and 12 foreign) and 115 pending applications (29 U.S. and 86 foreign). These patents and patent applications owned or licensed by us cover our LJPC-501, LJPC-401, and LJPC-30S programs, as well as other programs (discontinued GCS-100 and LJPC-1010 and new development programs).

In addition to those above, we plan to file additional patent applications that, if issued, would provide further protection for the LJPC-501, LJPC-401 and LJPC-30S programs. Although we believe the bases for these patents and patent applications are sound, they are untested, and there is no assurance that they will not be successfully challenged. There can be no assurance that any patent previously issued will be of commercial value, that any patent applications will result in issued patents of commercial value, or that our technology will not be held to infringe patents held by others.

Corporate Information

We were incorporated under the laws of the State of Delaware in 1989 and reincorporated in 2012 under the laws of California. Our executive offices are located at 10182 Telesis Court, 6th Floor, San Diego, California 92121 and our telephone number is (858) 207-4264. Additional information regarding our company, including our audited financial statements and descriptions of our business, is contained in the documents incorporated by reference in this prospectus supplement. See [Where You Can Find More Information](#) on page S-18 of this prospectus supplement and [Incorporation of Certain Information by Reference](#) on page S-19 of this prospectus supplement.

Table of Contents

The Offering

Common Stock we are Offering	shares
Common Stock to be Outstanding after this Offering	shares

Option to Purchase Additional Shares	We have granted the underwriters an option for a period of 30 days from the date of this prospectus supplement to purchase up to additional shares.
--------------------------------------	---

Use of Proceeds	We intend to use the net proceeds of this offering for general corporate purposes, including funding our ongoing and future development of our drug candidates, expenses relating to the potential regulatory approval of LJPC-501, potential future acquisitions and other general and administrative expenses. See Use of Proceeds on page S-6 of this prospectus supplement.
-----------------	---

Risk Factors	See Risk Factors beginning on page S-5 of this prospectus supplement for a discussion of factors you should read and consider carefully before investing in our common stock.
--------------	---

NASDAQ Capital Market symbol	LJPC
If the underwriters option to purchase additional shares is exercised in full, we will issue and sell an additional shares of our common stock and will have shares outstanding after the offering.	

The number of shares of common stock shown above to be outstanding after this offering is based on the 18,261,557 shares outstanding as of December 31, 2016 and excludes:

2,627,462 shares of our common stock subject to options outstanding as of December 31, 2016 having a weighted average exercise price of \$21.07 per share;

1,960,200 shares of our common stock that have been reserved for issuance in connection with future grants under the La Jolla 2013 Equity Incentive Plan as of December 31, 2016;

68,000 shares of our common stock subject to warrants outstanding as of December 31, 2016 having a weighted average price of \$13.79 per share;

6,735,378 shares of our common stock that have been reserved for issuance upon the conversion of 3,906 shares of our Series C-1² Convertible Preferred Stock (the Series C-1 Preferred Stock) issued and outstanding as of December 31, 2016; and

782,032 shares of our common stock that have been reserved for issuance upon the conversion of 2,737 shares of our Series F Convertible Preferred Stock (the Series F Preferred Stock) issued and outstanding as of December 31, 2016.

Except as otherwise noted, all information in this prospectus supplement assumes no exercise of the underwriters option to purchase additional shares.

S-4

Table of Contents

Risk Factors

*An investment in our common stock involves a high degree of risk. Before deciding whether to invest in our common stock, you should consider carefully the risks described below and discussed under the section captioned **Risk Factors** contained in our Annual Report on Form 10-K for the year ended December 31, 2016, which is incorporated herein by reference in its entirety, together with other information in this prospectus supplement, the accompanying prospectus, the information and documents incorporated by reference, and in any free writing prospectus that we have authorized for use in connection with this offering. If any of these risks actually occur, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment.*

Risks Related to this Offering

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

Investors purchasing shares of common stock in this offering will pay a price per share that substantially exceeds the as-adjusted book value per share of our tangible assets after subtracting our liabilities. As a result, investors purchasing shares of common stock in this offering will incur immediate dilution of \$ _____ per share, based on an assumed public offering price of \$35.88 per share (which is the last reported sale price of our common stock on The NASDAQ Capital Market on March 17, 2017) and our as-adjusted net tangible book value as of December 31, 2016 after giving effect to this offering. For information on how the foregoing amounts were calculated, see **Dilution**. As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation.

We will have broad discretion in the use of the net proceeds to us from this offering; we may not use the offering proceeds that we receive effectively.

Our management will have broad discretion in the application of the net proceeds to us from this offering, including for any of the purposes described in the section entitled **Use of Proceeds**, and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds to us from this offering, their ultimate use may vary from their currently intended use. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest the net proceeds to us from this offering in short-term, interest-bearing investment-grade securities. These investments may not yield a favorable return to our stockholders.

Table of Contents

Use of Proceeds

We estimate that the net proceeds from the sale of the shares of common stock that we are offering will be approximately \$93,750,000, or approximately \$107,850,000 if the underwriters exercise in full their option to purchase up to additional shares of common stock, based on an assumed public offering price of \$35.88 per share, which is the last reported sale price of our common stock on The NASDAQ Capital Market on March 17, 2017, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from the sale of the shares of common stock offered hereby primarily for general corporate purposes, which include, but are not limited to, funding our ongoing and future development of LJPC-501, LJPC-401 and LJPC-30S, for expenses relating to the potential regulatory approval of LJPC-501, potential future acquisitions and for general and administrative expenses. We may also use a portion of the net proceeds to acquire or invest in complementary businesses, products and technologies. As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering. Accordingly, our management will have broad discretion in the application of these proceeds.

Pending the use of the net proceeds, we intend to invest the net proceeds in short-term, interest-bearing, investment-grade securities.

Table of Contents**Dilution**

Our net tangible book value as of December 31, 2016 was approximately \$59.0 million, or \$3.23 per share. Net tangible book value per share is determined by dividing our total tangible assets, less total liabilities, by the number of shares of our common stock outstanding as of December 31, 2016. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately after this offering.

After giving effect to the sale of an assumed 2,787,068 shares of our common stock in this offering at an assumed public offering price of \$35.88 per share, which is the last reported sale price of our common stock on The NASDAQ Capital Market on March 17, 2017, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of December 31, 2016 would have been approximately \$153 million, or \$7.26 per share. This represents an immediate increase in net tangible book value of \$4.03 per share to existing shareholders and immediate dilution in net tangible book value of \$28.62 per share to new investors purchasing our common stock in this offering. The following table illustrates this dilution on a per share basis:

Assumed public offering price per share	\$ 35.88
Historical net tangible book value per share as of December 31, 2016	\$ 3.23
Increase in net tangible book value per share attributable to new investors	\$ 4.03
As-adjusted net tangible book value per share after this offering	\$ 7.26
Dilution per share to new investors purchasing our common stock in this offering	\$ 28.62

Each \$1.00 increase (decrease) in the assumed public offering price of \$35.88 per share, which is the last reported sale price of our common stock on The NASDAQ Capital Market on March 17, 2017, would increase (decrease) the as-adjusted net tangible book value by approximately \$0.12 per share, and increase (decrease) the dilution per share to new investors by approximately \$0.88 per share, assuming that the number of shares offered by us, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The as-adjusted information discussed above is illustrative only and will adjust based on the actual public offering price and other terms of this offering determined at pricing. Additionally, the above discussion and table are based on having 18,261,557 shares outstanding as of December 31, 2016 and exclude:

2,627,462 shares of our common stock subject to options outstanding as of December 31, 2016 having a weighted average exercise price of \$21.07 per share;

1,960,200 shares of our common stock that have been reserved for issuance in connection with future grants under the La Jolla 2013 Equity Incentive Plan as of December 31, 2016;

68,000 shares of our common stock subject to warrants outstanding as of December 31, 2016 having a weighted average price of \$13.79 per share;

6,735,378 shares of our common stock that have been reserved for issuance upon the conversion of 3,906 shares of our Series C-1² Preferred Stock issued and outstanding as of December 31, 2016; and

782,032 shares of our common stock that have been reserved for issuance upon the conversion of 2,737 shares of our Series F Preferred Stock issued and outstanding as of December 31, 2016.

S-7

Table of Contents

To the extent that such options or shares of convertible preferred stock outstanding as of December 31, 2016 may be exercised or converted, or other shares issued, investors purchasing our common stock in this offering may experience further dilution.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

S-8

Table of Contents**Underwriting**

We are offering the shares of common stock described in this prospectus supplement through a number of underwriters. J.P. Morgan Securities LLC and Cowen and Company, LLC are acting as joint book-running managers of the offering and as representatives of each of the underwriters named below. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter 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 listed next to its name in the following table:

Name	Number of Shares
J.P. Morgan Securities LLC	
Cowen and Company, LLC	
Total	

The underwriters are committed to purchase all the common shares offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters propose to offer the common shares directly to the public at the public offering price set forth on the cover page of this prospectus supplement and to certain dealers at that price less a concession not in excess of \$ _____ per share. Any such dealers may resell shares to certain other brokers or dealers at a discount of up to \$ _____ per share from the public offering price. After the initial public offering of the shares, the offering price and other selling terms may be changed by the underwriters. Sales of shares made outside of the United States may be made by affiliates of the underwriters.

The underwriters have an option to buy up to _____ additional shares of common stock from us. The underwriters have 30 days from the date of the underwriting agreement to exercise this option. If any shares of common stock are purchased with this option, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting fee is \$ _____ per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without option exercise	With full option exercise
Per Share	\$ _____	\$ _____
Total	\$ _____	\$ _____

Pursuant to the terms of the underwriting agreement, we have agreed to reimburse the underwriters for certain expenses, including reasonable fees and expenses of counsel, relating to certain aspects of this offering in an amount up to \$10,000. We estimate that the total expenses of this offering, including registration, filing and listing fees,

printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately \$.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters 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 representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

S-9

Table of Contents

We have agreed, subject to limited exceptions, that we will not: (1) sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open put equivalent position within the meaning of Rule 16a-1(h) under the Securities Exchange Act of 1934, as amended, (2) otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock, (3) file with the Securities and Exchange Commission a registration statement under the Securities Act of 1933, as amended, relating to any shares of our common stock, or securities exchangeable or exercisable for or convertible into shares of common stock, or (4) publicly announce an intention to do any of the foregoing, in each case without the prior written consent of J.P. Morgan Securities LLC, for a period of 90 days after the date of this prospectus supplement.

Our directors and executive officers have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons, with limited exceptions, for a period of 90 days after the date of this prospectus supplement, may not, without the prior written consent of J.P. Morgan Securities LLC: (1) sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open put equivalent position within the meaning of Rule 16a-1(h) under the Securities Exchange Act of 1934, as amended, (2) otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially, or (3) publicly announce an intention to do any of the foregoing.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933.

Our common stock is listed on The NASDAQ Capital Market under the symbol LJPC.

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of the common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be covered shorts, which are short positions in an amount not greater than the underwriters' option referred to above, or may be naked shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their option, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act of 1933, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they

may discontinue them at any time. The underwriters may carry out these transactions on The NASDAQ Capital Market, in the over-the-counter market or otherwise.

S-10

Table of Contents

In addition, in connection with this offering certain of the underwriters (and selling group members) may engage in passive market making transactions in our common stock on The NASDAQ Capital Market prior to the pricing and completion of this offering. Passive market making consists of displaying bids on The NASDAQ Capital Market no higher than the bid prices of independent market makers and making purchases at prices no higher than these independent bids and effected in response to order flow. Net purchases by a passive market maker on each day are generally limited to a specified percentage of the passive market maker's average daily trading volume in the common stock during a specified period and must be discontinued when such limit is reached. Passive market making may cause the price of our common stock to be higher than the price that otherwise would exist in the open market in the absence of these transactions. If passive market making is commenced, it may be discontinued at any time.

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 shares of common stock 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 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.

Notice to Prospective Investors in the European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, no offer of shares may be made to the public in that Relevant Member State other than:

- A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- B. to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the underwriters; or
- C. in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive and each person who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with us and each of the underwriters that it is a qualified investor within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive.

In the case of any shares being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares

to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representative has been obtained to each such proposed offer or resale.

For the purposes of this provision, the expression an offer of shares to the public in relation to any shares in any Relevant Member State means the communication in any form and by means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase shares, as the same may be varied in that Member State by any measure implementing the

S-11

Table of Contents

Prospectus Directive in that Member State, the expression Prospectus Directive means Directive 2003/71/EC (as amended, including by Directive 2010/73/EU), and includes any relevant implementing measure in the Relevant Member State.

Notice to Prospective Investors in the United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are qualified investors (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the Order) and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as relevant persons) or otherwise in circumstances which have not resulted and will not result in an offer to the public of the shares in the United Kingdom within the meaning of the Financial Services and Markets Act 2000.

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons.

Notice to Prospective Investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to Prospective Investors in Switzerland

The shares 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 does not constitute a prospectus within the meaning of, and 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 or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

S-12

Table of Contents

Neither this document nor any other offering or marketing material relating to the offering, us, or the shares 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 shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (CISA). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre (DIFC)

This document relates to an Exempt Offer in accordance with the Markets Rules 2012 of the Dubai Financial Services Authority (DFSA). This document is intended for distribution only to persons of a type specified in the Markets Rules 2012 of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for this document. The securities to which this document relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the securities offered should conduct their own due diligence on the securities. If you do not understand the contents of this document you should consult an authorized financial advisor.

In relation to its use in the DIFC, this document is strictly private and confidential and is being distributed to a limited number of investors and must not be provided to any person other than the original recipient, and may not be reproduced or used for any other purpose. The interests in the securities may not be offered or sold directly or indirectly to the public in the DIFC.

Notice to Prospective Investors in the United Arab Emirates

The shares have not been, and are not being, publicly offered, sold, promoted or advertised in the United Arab Emirates (including the Dubai International Financial Centre) other than in compliance with the laws of the United Arab Emirates (and the Dubai International Financial Centre) governing the issue, offering and sale of securities. Further, this prospectus does not constitute a public offer of securities in the United Arab Emirates (including the Dubai International Financial Centre) and is not intended to be a public offer. This prospectus has not been approved by or filed with the Central Bank of the United Arab Emirates, the Securities and Commodities Authority or the Dubai Financial Services Authority.

Notice to Prospective Investors in Australia

This prospectus supplement:

does not constitute a product disclosure document or a prospectus under Chapter 6D.2 of the Corporations Act 2001 (Cth) (the Corporations Act);

has not been, and will not be, lodged with the Australian Securities and Investments Commission (ASIC), as a disclosure document for the purposes of the Corporations Act and does not purport to include the information required of a disclosure document under Chapter 6D.2 of the Corporations Act;

does not constitute or involve a recommendation to acquire, an offer or invitation for issue or sale, an offer or invitation to arrange the issue or sale, or an issue or sale, of interests to a retail client (as defined in section 761G of the Corporations Act and applicable regulations) in Australia; and

may only be provided in Australia to select investors who are able to demonstrate that they fall within one or more of the categories of investors, or Exempt Investors, available under section 708 of the Corporations Act.

S-13

Table of Contents

The shares may not be directly or indirectly offered for subscription or purchased or sold, and no invitations to subscribe for or buy the shares may be issued, and no draft or definitive offering memorandum, advertisement or other offering material relating to any shares may be distributed in Australia, except where disclosure to investors is not required under Chapter 6D of the Corporations Act or is otherwise in compliance with all applicable Australian laws and regulations. By submitting an application for the shares, you represent and warrant to us that you are an Exempt Investor.

As any offer of shares under this document will be made without disclosure in Australia under Chapter 6D.2 of the Corporations Act, the offer of those securities for resale in Australia within 12 months may, under section 707 of the Corporations Act, require disclosure to investors under Chapter 6D.2 if none of the exemptions in section 708 applies to that resale. By applying for the shares you undertake to us that you will not, for a period of 12 months from the date of issue of the shares, offer, transfer, assign or otherwise alienate those securities to investors in Australia except in circumstances where disclosure to investors is not required under Chapter 6D.2 of the Corporations Act or where a compliant disclosure document is prepared and lodged with ASIC.

Notice to Prospective Investors in Japan

The shares have not been and will not be registered pursuant to Article 4, Paragraph 1 of the Financial Instruments and Exchange Act. Accordingly, none of the shares nor any interest therein may be offered or sold, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to or for the benefit of a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Act and any other applicable laws, regulations and ministerial guidelines of Japan in effect at the relevant time.

Notice to Prospective Investors in Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to professional investors as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a prospectus as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to professional investors as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Singapore

This prospectus supplement has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the SFA), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise

pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

S-14

Table of Contents

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,
securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:
 - (a) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
 - (b) where no consideration is or will be given for the transfer;
 - (c) where the transfer is by operation of law;
 - (d) as specified in Section 276(7) of the SFA; or
 - (e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore

Notice to Prospective Investors in Bermuda

Shares may be offered or sold in Bermuda only in compliance with the provisions of the Investment Business Act of 2003 of Bermuda which regulates the sale of securities in Bermuda. Additionally, non-Bermudian persons (including companies) may not carry on or engage in any trade or business in Bermuda unless such persons are permitted to do so under applicable Bermuda legislation.

Notice to Prospective Investors in Saudi Arabia

This document may not be distributed in the Kingdom of Saudi Arabia except to such persons as are permitted under the Offers of Securities Regulations as issued by the board of the Saudi Arabian Capital Market Authority (CMA) pursuant to resolution number 2-11-2004 dated 4 October 2004 as amended by resolution number 1-28-2008, as amended (the CMA Regulations). The CMA does not make any representation as to the accuracy or completeness of this document and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of this document. Prospective purchasers of the securities offered hereby should conduct their own due diligence on the accuracy of the information relating to the securities. If you do not understand the contents of this

document, you should consult an authorized financial adviser.

Notice to Prospective Investors in the British Virgin Islands

The shares are not being, and may not be offered to the public or to any person in the British Virgin Islands for purchase or subscription by or on behalf of us. The shares may be offered to companies incorporated under the BVI Business Companies Act, 2004 (British Virgin Islands) (BVI Companies), but only where the offer will be made to, and received by, the relevant BVI Company entirely outside of the British Virgin Islands.

Notice to Prospective Investors in China

This prospectus supplement does not constitute a public offer of the shares, whether by sale or subscription, in the People's Republic of China (the PRC). The shares are not being offered or sold directly or indirectly in the PRC to or for the benefit of, legal or natural persons of the PRC.

S-15

Table of Contents

Further, no legal or natural persons of the PRC may directly or indirectly purchase any of the shares or any beneficial interest therein without obtaining all prior PRC's governmental approvals that are required, whether statutorily or otherwise. Persons who come into possession of this document are required by the issuer and its representatives to observe these restrictions.

Notice to Prospective Investors in Korea

The shares have not been and will not be registered under the Financial Investments Services and Capital Markets Act of Korea and the decrees and regulations thereunder (the "FSCMA"), and the shares have been and will be offered in Korea as a private placement under the FSCMA. None of the shares may be offered, sold or delivered directly or indirectly, or offered or sold to any person for re-offering or resale, directly or indirectly, in Korea or to any resident of Korea except pursuant to the applicable laws and regulations of Korea, including the FSCMA and the Foreign Exchange Transaction Law of Korea and the decrees and regulations thereunder (the "FETL"). The shares have not been listed on the Korea Exchange in Korea. Furthermore, the purchaser of the shares shall comply with all applicable regulatory requirements (including but not limited to requirements under the FETL) in connection with the purchase of the shares. By the purchase of the shares, the relevant holder thereof will be deemed to represent and warrant that if it is in Korea or is a resident of Korea, it purchased the shares pursuant to the applicable laws and regulations of Korea.

Notice to Prospective Investors in Malaysia

No prospectus or other offering material or document in connection with the offer and sale of the shares has been or will be registered with the Securities Commission of Malaysia ("Commission") for the Commission's approval pursuant to the Capital Markets and Services Act 2007. Accordingly, this prospectus supplement and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Malaysia other than (i) a closed end fund approved by the Commission; (ii) a holder of a Capital Markets Services Licence; (iii) a person who acquires the shares, as principal, if the offer is on terms that the shares may only be acquired at a consideration of not less than RM250,000 (or its equivalent in foreign currencies) for each transaction; (iv) an individual whose total net personal assets or total net joint assets with his or her spouse exceeds RM3 million (or its equivalent in foreign currencies), excluding the value of the primary residence of the individual; (v) an individual who has a gross annual income exceeding RM300,000 (or its equivalent in foreign currencies) per annum in the preceding twelve months; (vi) an individual who, jointly with his or her spouse, has a gross annual income of RM400,000 (or its equivalent in foreign currencies), per annum in the preceding twelve months; (vii) a corporation with total net assets exceeding RM10 million (or its equivalent in a foreign currencies) based on the last audited accounts; (viii) a partnership with total net assets exceeding RM10 million (or its equivalent in foreign currencies); (ix) a bank licensee or insurance licensee as defined in the Labuan Financial Services and Securities Act 2010; (x) an Islamic bank licensee or takaful licensee as defined in the Labuan Financial Services and Securities Act 2010; and (xi) any other person as may be specified by the Commission; provided that, in the each of the preceding categories (i) to (xi), the distribution of the shares is made by a holder of a Capital Markets Services Licence who carries on the business of dealing in securities. The distribution in Malaysia of this prospectus supplement is subject to Malaysian laws. This prospectus supplement does not constitute and may not be used for the purpose of public offering or an issue, offer for subscription or purchase, invitation to subscribe for or purchase any securities requiring the registration of a prospectus with the Commission under the Capital Markets and Services Act 2007.

Notice to Prospective Investors in Taiwan

The shares have not been and will not be registered with the Financial Supervisory Commission of Taiwan pursuant to relevant securities laws and regulations and may not be sold, issued or offered within Taiwan through a public offering or in circumstances which constitutes an offer within the meaning of the Securities and

S-16

Table of Contents

Exchange Act of Taiwan that requires a registration or approval of the Financial Supervisory Commission of Taiwan. No person or entity in Taiwan has been authorized to offer, sell, give advice regarding or otherwise intermediate the offering and sale of the shares in Taiwan.

Notice to Prospective Investors in South Africa

Due to restrictions under the securities laws of South Africa, the shares are not offered, and the offer shall not be transferred, sold, renounced or delivered, in South Africa or to a person with an address in South Africa, unless one or other of the following exemptions applies:

i the offer, transfer, sale, renunciation or delivery is to:

(a) persons whose ordinary business is to deal in securities, as principal or agent;

(b) the South African Public Investment Corporation;

(c) persons or entities regulated by the Reserve Bank of South Africa;

(d) authorised financial service providers under South African law;

(e) financial institutions recognised as such under South African law;

(f) a wholly-owned subsidiary of any person or entity contemplated in (c), (d) or (e), acting as agent in the capacity of an authorised portfolio manager for a pension fund or collective investment scheme (in each case duly registered as such under South African law); or

(g) any combination of the person in (a) to (f); or

ii the total contemplated acquisition cost of the securities, for any single addressee acting as principal is equal to or greater than ZAR1,000,000.

No offer to the public (as such term is defined in the South African Companies Act, No. 71 of 2008 (as amended or re-enacted) (the South African Companies Act)) in South Africa is being made in connection with the issue of the shares. Accordingly, this document does not, nor is it intended to, constitute a registered prospectus (as that term is defined in the South African Companies Act) prepared and registered under the South African Companies Act and has not been approved by, and/or filed with, the South African Companies and Intellectual Property Commission or any other regulatory authority in South Africa. Any issue or offering of the shares in South Africa constitutes an offer of the shares in South Africa for subscription or sale in South Africa only to persons who fall within the exemption from offers to the public set out in section 96(1)(a) of the South African Companies Act. Accordingly, this document must not be acted on or relied on by persons in South Africa who do not fall within section 96(1)(a) of the South African Companies Act (such persons being referred to as SA Relevant Persons). Any investment or investment activity to which this document relates is available in South Africa only to SA Relevant Persons and will be engaged in South Africa only with SA relevant persons.

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us

and such affiliates in the ordinary course of their business, for which they have received and may continue to receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

S-17

Table of Contents

Legal Matters

Gibson, Dunn & Crutcher LLP of San Francisco, California will issue an opinion with respect to the validity of the issuance of the securities being offered hereby. Latham & Watkins LLP of San Diego, California is counsel to the underwriters in connection with this offering.

Experts

The consolidated financial statements of La Jolla Pharmaceutical Company as of December 31, 2016 and 2015 and for each of the years in the three-year period ended December 31, 2016 and the effectiveness of internal control over financial reporting as of December 31, 2016 incorporated in this prospectus supplement by reference from the La Jolla Pharmaceutical Company Annual Report on Form 10-K for the year ended December 31, 2016 have been audited by Squar Milner LLP, an independent registered public accounting firm, as stated in their reports thereon, incorporated herein by reference, and have been incorporated in this prospectus supplement and elsewhere in the registration statement in reliance upon such reports and upon the authority of such firm as experts in accounting and auditing.

Where You Can Find More Information

We must comply with the informational requirements of the Exchange Act and we are required to file reports and proxy statements and other information with the SEC. You may read and copy these reports, proxy statements and other information at the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies at the prescribed rates from the Public Reference Section of the SEC at its principal office in Washington, D.C. You may call the SEC at 1-800-SEC-0330 for further information about the public reference room. The SEC also maintains a website that contains reports, proxy and information statements and other information regarding issuers like us that file electronically with the SEC. You may access the SEC's web site at <http://www.sec.gov>. We maintain a website at www.lajollapharmaceuticals.com. The information contained in, or that can be accessed through, our website is not incorporated by reference herein and is not part of this prospectus supplement.

Statements contained in this prospectus supplement as to the contents of any contract or other document are not necessarily complete, and in each instance we refer you to the copy of the contract or document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference.

Table of Contents

Incorporation of Certain Information by Reference

The SEC allows us to incorporate by reference into this prospectus supplement the information contained in other documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. Any statement contained in any document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded, for purposes of this prospectus supplement, to the extent that a statement contained in or omitted from this prospectus supplement, or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement. We incorporate by reference the documents listed below which have been filed by us:

Our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed on February 23, 2017;

Our Definitive Proxy Statement on Schedule 14A, filed on July 22, 2016;

Our Current Reports on Form 8-K, filed on January 5, 2017, February 28, 2017 and March 20, 2017; and

The description of our Common Stock contained in our registration statement on Form 8-A (Registration No. 001-36282), filed on January 28, 2014, including any amendments or reports filed for the purpose of updating such description.

All documents we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, except as to any portion of any report or documents that is not deemed filed under such provisions on or after the date of this prospectus supplement until the earlier of the date on which all of the securities registered hereunder have been sold or the registration statement of which this prospectus supplement is a part has been withdrawn, shall be deemed incorporated by reference in this prospectus supplement and to be a part of this prospectus supplement from the date of filing of those documents.

We will furnish without charge to each person, including any beneficial owner, to whom this prospectus supplement is delivered, upon written or oral request, a copy of any document incorporated by reference. Requests should be addressed to Corporate Secretary, 10182 Telesis Court, 6th Floor, San Diego, California 92121 or via telephone at (858) 207-4264.

You should rely only on the information incorporated by reference or provided in this prospectus supplement. We have not authorized anyone to provide you with different information. You should not assume that the information contained in this prospectus supplement is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus supplement is delivered or securities are sold on a later date.

Nothing in this prospectus supplement shall be deemed to incorporate information furnished but not filed with the SEC pursuant to Item 2.02 or 7.01 of Form 8-K.

* * *

S-19

Table of Contents

PROSPECTUS

\$150,000,000

La Jolla Pharmaceutical Company

Common Stock

Preferred Stock

Debt Securities

Warrants

From time to time, we may offer common stock, preferred stock, debt securities or warrants, or a combination of any of these securities, at an aggregate initial offering price not to exceed \$150,000,000. The debt securities that we may offer may consist of senior debt securities or subordinated debt securities, in each case consisting of notes or other evidence of indebtedness in one or more series. The warrants that we may offer will consist of warrants to purchase any of the other securities that may be sold under this prospectus. The securities offered under this prospectus may be offered separately, together or in series separate, and in amounts, at prices and on terms to be determined at the time of sale. A prospectus supplement that will set forth the terms of the offering of any securities will accompany this prospectus.

We may offer these securities through agents, underwriters or dealers or directly to investors. See Plan of Distribution in this prospectus. Each prospectus supplement will provide the amount, price and terms of the plan of distribution relating to the securities to be sold pursuant to such prospectus supplement. We will set forth the names of any underwriters or agents in the accompanying prospectus supplement, as well as the net proceeds we expect to receive from such sale.

You should read this prospectus, the prospectus supplement and the documents incorporated by reference in this prospectus and any prospectus supplement carefully before you invest. This prospectus may not be used to offer or sell any of the common stock, preferred stock, debt securities or warrants unless accompanied by a prospectus supplement.

Our common stock is listed on the Nasdaq Capital Market under the symbol LJPC. On November 17, 2016, the last reported sale price of our common stock on the Nasdaq Capital Market was \$21.06 per share. Our principal executive offices are located at 10182 Telesis Court, 6th Floor, San Diego, California 92121, and our telephone number is (858) 207-4264.

Investing in our securities involves a high degree of risk. You should carefully consider the Risk Factors beginning on page 4 before you invest in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is December 8, 2016

Table of Contents**TABLE OF CONTENTS**

	Page
<u>ABOUT THIS PROSPECTUS</u>	1
<u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	2
<u>ABOUT THE COMPANY</u>	3
<u>RISK FACTORS</u>	4
<u>USE OF PROCEEDS</u>	5
<u>RATIO OF EARNINGS TO FIXED CHARGES</u>	6
<u>SECURITIES WE MAY OFFER</u>	7
<u>PLAN OF DISTRIBUTION</u>	14
<u>EXPERTS</u>	17
<u>LEGAL MATTERS</u>	17
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	17
<u>INCORPORATION OF CERTAIN INFORMATION BY REFERENCE</u>	18

You should rely only on the information contained or incorporated by reference into this prospectus and any prospectus supplement or any free writing prospectus that we may provide to you. We have not authorized anyone to provide you with different information. You must not rely upon any unauthorized information or representation. You should not assume that the information contained in this prospectus or any applicable prospectus supplement is accurate as of any date other than the date on the front cover of the prospectus or the prospectus supplement or that the information contained in any document incorporated by reference is accurate as of any date other than the date of the document incorporated by reference. Our business, financial condition, results of operations and prospects may have changed since those dates. We are not making offers to sell the securities in any jurisdiction in which an offer or solicitation is not authorized or permitted or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation.

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a 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 offer common stock, preferred stock, debt securities and/or warrants over time in one or more offerings at prices and on terms to be determined by market conditions at the time of the offering, up to a total dollar amount of \$150,000,000. This prospectus only provides you with a general description of the securities we may offer. Each time we sell any common stock, preferred stock, debt securities or warrants under this prospectus, we will provide a prospectus supplement that will contain more specific information about the securities being offered and the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. Each prospectus supplement and any relating free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents incorporated by reference into this prospectus. If there is any inconsistency between the information in this prospectus and any accompanying prospectus supplement or related free writing prospectus, you should rely on the information in the prospectus supplement or any related free writing prospectus we may authorize to be provided to you. This prospectus may not be used to sell any common stock, preferred stock, debt securities or warrants unless accompanied by a prospectus supplement. You should carefully read this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the additional information incorporated herein by reference as described under the headings **Where You Can Find More Information** and **Incorporation of Certain Information by Reference** in this prospectus, before you invest in any of the securities being offered hereby.

We have not authorized anyone to provide you with information in addition to or different from that contained in this prospectus, any applicable prospectus supplement and any related free writing prospectus. We take no responsibility for, and can provide no assurances as to the reliability of, any information not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we may authorize to be provided to you. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document (unless the information specifically indicates that another date applies) and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading **Where You Can Find More Information**.

Table of Contents

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains certain forward-looking statements as that term is defined under the Private Securities Litigation Reform Act of 1995, and we intend that such forward-looking statements be subject to the safe harbors created thereby. For this purpose, any statements contained in this prospectus except for historical information may be deemed to be forward-looking statements. Without limiting the generality of the foregoing, words such as may, will, expect, believe, anticipate, intend, could, estimate, or continue or the negative or other variations thereof or comparable terminology are intended to identify forward-looking statements. In addition, any statements that refer to projections of our future financial performance, trends in our businesses, or other characterizations of future events or circumstances are forward-looking statements.

The forward-looking statements included herein are based on current expectations of our management based on available information and involve a number of risks and uncertainties, all of which are difficult or impossible to predict accurately and many of which are beyond our control. As such, our actual results may differ significantly from those expressed in any forward-looking statements. Factors that may cause or contribute to such differences include, but are not limited to, those discussed in more detail in Item 1 (Business) and Item 1A (Risk Factors) of Part I and Item 7 (Management's Discussion and Analysis of Financial Condition and Results of Operations) of Part II of our most recent Annual Report on Form 10-K, factors described under the section captioned Risk Factors in this prospectus, as may be updated from time to time by our future filings under the Securities Exchange Act of 1934, as amended (the Exchange Act), and elsewhere in the documents incorporated by reference in this prospectus. Readers should carefully review these risks, as well as the additional risks described in other documents we file from time to time with the SEC. In light of the significant risks and uncertainties inherent in the forward-looking information included herein, the inclusion of such information should not be regarded as a representation by us or any other person that such results will be achieved, and readers are cautioned not to place undue reliance on such forward-looking information. Except as may be required by law, we disclaim any intent to revise the forward-looking statements contained herein to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

Table of Contents

ABOUT THE COMPANY

In this report, all references to we, our, us, La Jolla and the Company refer to La Jolla Pharmaceutical Company, a California corporation.

La Jolla Pharmaceutical Company is a biopharmaceutical company focused on the discovery, development and commercialization of innovative therapies intended to significantly improve outcomes in patients suffering from life-threatening diseases. The Company has several product candidates in development. LJPC-501 is the Company's proprietary formulation of angiotensin II for the potential treatment of catecholamine-resistant hypotension. LJPC-401 is the Company's novel formulation of synthetic human hepcidin for the potential treatment of conditions characterized by iron overload, such as hereditary hemochromatosis, beta thalassemia, sickle cell disease and myelodysplastic syndrome. LJPC-30S is the Company's next-generation gentamicin derivative program that is focused on therapeutics for the potential treatment of serious bacterial infections as well as rare genetic disorders, such as cystic fibrosis and Duchenne muscular dystrophy.

Our common stock is listed on the NASDAQ Capital Market under the symbol **LJPC**.

Our executive offices are located at 10182 Telesis Court, 6th Floor, San Diego, California 92121 and our telephone number is (858) 207-4264. Additional information regarding our company, including our audited financial statements and descriptions of our business, is contained in the documents incorporated by reference in this prospectus. See

Where You Can Find More Information on page 17 and **Incorporation of Certain Information by Reference** on page 18.

Table of Contents

RISK FACTORS

Investing in our securities involves a high degree of risk. Before making an investment decision, you should carefully consider the risks described in the sections entitled "Risk Factors" in our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q, as filed with the SEC, which are incorporated herein by reference in their entirety, as well as any amendment or updates to our risk factors reflected in subsequent filings with the SEC, including any applicable prospectus supplement. Our business, financial condition, results of operations or prospects could be materially adversely affected by any of these risks. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment. This prospectus and the documents incorporated herein by reference also contain forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks mentioned elsewhere in this prospectus. For more information, see the section entitled "Where You Can Find More Information."

Table of Contents

USE OF PROCEEDS

Unless otherwise stated in the applicable prospectus supplement, we intend to use the net proceeds from the sale of our securities and from the exercise of the warrants issued pursuant hereto, if any, for general corporate purposes, which may include one or more of the following:

working capital;

research and clinical development activities;

potential future acquisitions of companies and/or technologies; and

capital expenditures.

Our management will have broad discretion in the allocation of the net proceeds of any offering. Pending such uses, we intend to invest the net proceeds in short-term, investment grade, interest-bearing securities.

Table of Contents

RATIO OF EARNINGS TO FIXED CHARGES

If we offer debt securities and/or preference equity securities under this prospectus, then we will, if required at that time, provide a ratio of earnings to fixed charges and/or ratio of combined fixed charges and preference dividends to earnings, respectively, in the applicable prospectus supplement for such offering.

Table of Contents

SECURITIES WE MAY OFFER

We may offer shares of our common stock, preferred stock, debt securities and/or warrants to purchase common stock, preferred stock and/or debt securities with a total value of up to \$150,000,000 from time to time under this prospectus at prices and on terms to be determined by market conditions at the time of offering. Each time we offer a type or series of securities, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities.

Common Stock

The following summary of the terms of our common stock is subject to and qualified in its entirety by reference to our charter and by-laws, copies of which are on file with the SEC as exhibits to previous SEC filings. Please refer to [Where You Can Find More Information](#) below for directions on obtaining these documents.

We may issue shares of our common stock from time to time. Holders of our common stock are entitled to one vote per share on all matters that require shareholder approval. We are authorized to issue 100,000,000 shares of common stock, \$0.0001 par value per share. As of September 30, 2016, 18,254,009 shares of common stock were issued and outstanding. There are no cumulative voting rights while our common stock is listed on a national securities exchange, such as NASDAQ. Our common stock does not carry any redemption rights or any preemptive rights enabling a holder to subscribe for, or receive shares of, any class of our common stock or any other securities convertible into shares of any class of our common stock.

Our common stock is listed on the NASDAQ Capital Market under the symbol [LJPC](#). The transfer agent and registrar for the common stock is American Stock Transfer & Trust Company, LLC.

Preferred Stock

We may issue shares of our preferred stock from time to time, in one or more series. Under our articles of incorporation, our board of directors has the authority, without further action by shareholders, to designate up to 8,000,000 shares of preferred stock, \$0.0001 par value per share, in one or more series and to fix the rights, preferences, privileges, qualifications and restrictions granted to or imposed upon the preferred stock, including but not limited to dividend rights, conversion rights, voting rights, rights and terms of redemption, liquidation preference and sinking fund terms, any or all of which may be greater than the rights of the common stock. As of September 30, 2016, 6,643 shares of preferred stock were issued and outstanding.

If we issue preferred stock, we will fix the rights, preferences, privileges, qualifications and restrictions of the preferred stock of each series that we sell under this prospectus and applicable prospectus supplements in the certificate of designations relating to that series. If we issue preferred stock, we will incorporate by reference into the registration statement of which this prospectus is a part the form of any certificate of designations that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. We urge you to read the prospectus supplement related to any series of preferred stock we may offer, as well as the complete certificate of designations that contains the terms of the applicable series of preferred stock.

Warrants

We may issue warrants for the purchase of common stock, preferred stock in one or more series and/or debt securities from time to time. We may issue warrants independently or together with common stock, preferred stock and/or debt securities; and the warrants may be attached to or separate from those securities.

If we issue warrants, they will be evidenced by warrant agreements or warrant certificates issued under one or more warrant agreements, which are contracts between us and an agent for the holders of the warrants. We

Table of Contents

urge you to read the prospectus supplement related to any series of warrants we may offer, as well as the complete warrant agreement and warrant certificate that contain the terms of the warrants. If we issue warrants, forms of warrant agreements and warrant certificates relating to warrants for the purchase of common stock, preferred stock and/or debt securities will be incorporated by reference into the registration statement of which this prospectus is a part from reports we would subsequently file with the SEC.

Debt Securities

We may issue debt securities under an indenture to be entered into between us and a trustee chosen by us, qualified to act as such under the Trust Indenture Act of 1939, as amended (the "Trust Indenture Act") and appointed under an indenture. The indenture will be governed by the Trust Indenture Act.

The following is a summary of the indenture. It does not restate the indenture entirely. We urge you to read the indenture. We have filed the form of indenture as an exhibit to the registration statement of which this prospectus is a part, and we will file the indenture we enter into and the supplemental indentures or authorizing resolutions with respect to particular series of debt securities as exhibits to current or other reports we file with the SEC. See "Where You Can Find More Information" for information on how to obtain copies of the indentures and the supplemental indentures or authorizing resolutions. You may also inspect copies of the documents for the particular series at the office of the trustee. References below to an "indenture" are references to the applicable indenture, as supplemented, under which a particular series of debt securities is issued.

Terms of the Debt Securities

Our debt securities will be general obligations of the Company. We may issue them in one or more series. Authorizing resolutions or a supplemental indenture will set forth the specific terms of each series of debt securities. We will provide a prospectus supplement for each series of debt securities that will describe:

the title of the debt securities and whether the debt securities are senior, senior subordinated, or subordinated debt securities;

the aggregate principal amount of the debt securities and any limit upon the aggregate principal amount of the series of debt securities, and, if the series is to be issued at a discount from its face amount, the method of computing the accretion of such discount;

the percentage of the principal amount at which debt securities will be issued and, if other than the full principal amount thereof, the percentage of the principal amount of the debt securities that is payable if maturity of the debt securities is accelerated because of a default;

the date or dates on which principal of the debt securities will be payable and the amount of principal that will be payable;

the rate or rates (which may be fixed or variable) at which the debt securities will bear interest, if any, or the method of calculation of such rate or rates, as well as the dates from which interest will accrue, the dates on which interest will be payable and the record date for the interest payable on any payment date;

any collateral securing the performance of our obligations under the debt securities;

the currency or currencies (including any composite currency) in which principal, premium, if any, and interest, if any, will be payable, and if such payments may be made in a currency other than that in which the debt securities are denominated, the manner for determining such payments, including the time and manner of determining the exchange rate between the currency in which such securities are denominated and the currency in which such securities or any of them may be paid, and any additions to, modifications of or deletions from the terms of the debt securities to provide for or to facilitate the issuance of debt securities denominated or payable in a currency other than U.S. dollars;

Table of Contents

the place or places where principal, premium, if any, and interest, if any, on the debt securities will be payable and where debt securities that are in registered form can be presented for registration of transfer or exchange;

the denominations in which the debt securities will be issuable, if different from \$2,000 and multiples of \$1,000 in excess thereof;

any provisions regarding our right to redeem or purchase debt securities or the right of holders to require us to redeem or purchase debt securities;

the right, if any, of holders of the debt securities to convert or exchange them into our common stock or other securities of any kind of us or another obligor, including any provisions intended to prevent dilution of the conversion rights and, if so, the terms and conditions upon which such securities will be so convertible or exchangeable, including the initial conversion or exchange price or rate or the method of calculation, how and when the conversion price or exchange ratio may be adjusted, whether conversion or exchange is mandatory, at the option of the holder or at our option, the conversion or exchange period, and any other provision in relation thereto;

any provisions requiring or permitting us to make payments to a sinking fund to be used to redeem debt securities or a purchase fund to be used to purchase debt securities;

the terms, if any, upon which debt securities may be senior or subordinated to our other indebtedness;

any additions to, modifications of or deletions from the terms of the debt securities with respect to events of default or covenants or other provisions set forth in the indenture for the series to which the supplemental indenture or authorizing resolution relates;

whether and upon what terms the debt securities of such series may be defeased or discharged, if different from the provisions set forth in the indenture for the series to which the supplemental indenture or authorizing resolution relates;

whether the debt securities will be issued in registered or bearer form and the terms of these forms;

whether the debt securities will be issued in whole or in part in the form of a global security and, if applicable, the identity of the depositary for such global security;

any provision for electronic issuance of the debt securities or issuance of the debt securities in uncertificated form; and

any other material terms of the debt securities, which may be different from the terms set forth in this prospectus.

The applicable prospectus supplement will also describe any material covenants to which a series of debt securities will be subject and the applicability of those covenants to any of our subsidiaries to be restricted thereby, which are referred to herein as restricted subsidiaries. The applicable prospectus supplement will also describe provisions for restricted subsidiaries to cease to be restricted by those covenants.

Events of Default and Remedies

Unless otherwise described in the applicable prospectus supplement, an event of default with respect to any series of debt securities will be defined in the indenture or applicable supplemental indenture or authorizing resolution as being:

our failure to pay interest on any debt security of such series when the same becomes due and payable and the continuance of any such failure for a period of 30 days;

our failure to pay the principal or premium of any debt security of such series when the same becomes due and payable at maturity, upon acceleration, redemption or otherwise;

Table of Contents

our failure or the failure of any restricted subsidiary to comply with any of its agreements or covenants in, or provisions of, the debt securities of such series or the indenture (as they relate thereto) and such failure continues for a period of 60 days after our receipt of notice of the default from the trustee or from the holders of at least 25% in aggregate principal amount of the then outstanding debt securities of that series (except in the case of a default with respect to the provisions of the indenture regarding the consolidation, merger, sale, lease, conveyance or other disposition of all or substantially all of the assets of us (or any other provision specified in the applicable supplemental indenture or authorizing resolution), which will constitute an event of default with notice but without passage of time);

default under any mortgage, indenture or instrument under which there may be issued or by which there may be secured or evidenced any indebtedness (other than non-recourse indebtedness, as defined in the indenture) for money borrowed by us or any of our restricted subsidiaries (or the payment of which is guaranteed by us or any of our restricted subsidiaries), whether such indebtedness or guarantee now exists or is created after the date we issue debt securities, if that default:

- (a) is caused by a failure to pay at final stated maturity the principal amount of such indebtedness prior to the expiration of the grace period provided in such indebtedness on the date of such default (a Payment Default); or
- (b) results in the acceleration of such indebtedness prior to its express maturity without such indebtedness having been discharged or such acceleration having been cured, waived, rescinded or annulled for the period and after the notice had been provided, and, in each case, the principal amount of any such indebtedness, together with the principal amount of any other such indebtedness under which there has been a Payment Default or the maturity of which has been so accelerated, aggregates \$50 million or more; or

certain events of bankruptcy, insolvency or reorganization occur with respect to us or any restricted subsidiary that is a significant subsidiary (as defined in the indenture).

The indenture will provide that the trustee may withhold notice to the holders of any series of debt securities of any default, except a default in payment of principal or interest, if any, with respect to such series of debt securities, if the trustee considers it in the interest of the holders of such series of debt securities to do so.

The indenture will provide that if any event of default has occurred and is continuing with respect to any series of debt securities, the trustee or the holders of not less than 25% in principal amount of such series of debt securities then outstanding may declare the principal of all the debt securities of such series to be due and payable immediately. However, the holders of a majority in principal amount of the debt securities of such series then outstanding by notice to the trustee may waive any existing default and its consequences with respect to such series of debt securities, other than any event of default in payment of principal or interest. Holders of a majority in principal amount of the then outstanding debt securities of any series may rescind an acceleration with respect to such series and its consequences, except an acceleration due to nonpayment of principal or interest on such series, if the rescission would not conflict with any judgment or decree and if all existing events of default with respect to such series have been cured or waived.

The holders of a majority of the outstanding principal amount of the debt securities of any series will have the right to direct the time, method and place of conducting any proceedings for any remedy available to the trustee with respect

to such series, subject to limitations specified in the indenture.

Table of Contents

Defeasance

The indenture will permit us to terminate all our respective obligations under the indenture as they relate to any particular series of debt securities, other than the obligation to pay interest, if any, on and the principal of the debt securities of such series and certain other obligations, at any time by:

depositing in trust with the trustee, under an irrevocable trust agreement, money or government obligations in an amount sufficient to pay principal of and interest, if any, on the debt securities of such series to their maturity or redemption; and

complying with other conditions, including delivery to the trustee of an opinion of counsel to the effect that holders will not recognize income, gain or loss for federal income tax purposes as a result of our exercise of such right and will be subject to federal income tax on the same amount and in the same manner and at the same times as would have been the case otherwise.

The indenture will also permit us to terminate all of our respective obligations under the indenture as they relate to any particular series of debt securities, including the obligations to pay interest, if any, on and the principal of the debt securities of such series and certain other obligations, at any time by:

depositing in trust with the trustee, under an irrevocable trust agreement, money or government obligations in an amount sufficient to pay principal and interest, if any, on the debt securities of such series to their maturity or redemption; and

complying with other conditions, including delivery to the trustee of an opinion of counsel to the effect that (A) we have received from, or there has been published by, the Internal Revenue Service a ruling, or (B) since the date such series of debt securities were originally issued, there has been a change in the applicable federal income tax law, in either case to the effect that, and based thereon such opinion of counsel shall state that, holders will not recognize income, gain or loss for federal income tax purposes as a result of our exercise of such right and will be subject to federal income tax on the same amount and in the same manner and at the same times as would have been the case otherwise.

In addition, the indenture will permit us to terminate substantially all our respective obligations under the indenture as they relate to a particular series of debt securities by depositing with the trustee money or government obligations sufficient to pay all principal and interest on such series at its maturity or redemption date if the debt securities of such series will become due and payable at maturity within one year or are to be called for redemption within one year of the deposit.

Transfer and Exchange

A holder will be able to transfer or exchange debt securities only in accordance with the indenture. The registrar may require a holder, among other things, to furnish appropriate endorsements and transfer documents, and to pay any taxes and fees required by law or permitted by the indenture.

Amendment, Supplement and Waiver

Without notice to or the consent of any holder, we and the trustee may amend or supplement the indenture or the debt securities of a series to:

cure any ambiguity, omission, defect or inconsistency;

comply with the provisions of the indenture regarding the consolidation, merger, sale, lease, conveyance or other disposition of all or substantially all of our assets;

provide that specific provisions of the indenture shall not apply to a series of debt securities not previously issued or to make a change to specific provisions of the indenture that only applies to any series of debt securities not previously issued or to additional debt securities of a series not previously issued;

create a series and establish its terms;

Table of Contents

provide for uncertificated debt securities in addition to or in place of certificated debt securities;

add a guarantor subsidiary in respect of any series of debt securities;

secure any series of debt securities;

comply with requirements of the SEC in order to effect or maintain the qualification of the indenture under the Trust Indenture Act;

make any change that does not adversely affect the rights of any holder; or

conform the provisions of the indenture to the final offering document in respect of any series of debt securities.

With the exceptions discussed below, we and the trustee may amend or supplement the indenture or the debt securities of a particular series with the written consent of the holders of at least a majority in principal amount of the debt securities of such series then outstanding. In addition, the holders of a majority in principal amount of the debt securities of such series then outstanding may waive any existing default under, or compliance with, any provision of the debt securities of a particular series or of the indenture relating to a particular series of debt securities, other than any event of default in payment of interest or principal. These consents and waivers may be obtained in connection with a purchase of, or tender offer or exchange offer for, debt securities.

Without the consent of each holder affected, we and the trustee may not:

reduce the amount of debt securities of such series whose holders must consent to an amendment, supplement or waiver;

reduce the rate of or extend the time for payment of interest, including defaulted interest;

reduce the principal of or extend the fixed maturity of any debt security or alter the provisions with respect to redemptions or mandatory offers to repurchase debt securities;

make any change that adversely affects any right of a holder to convert or exchange any debt security into or for shares of our common stock or other securities, cash or other property in accordance with the terms of such security;

modify the ranking or priority of the debt securities;

make any change to any provision of the indenture relating to the waiver of existing defaults, the rights of holders to receive payment of principal and interest on the debt securities, or to the provisions regarding amending or supplementing the indenture or the debt securities of a particular series with the written consent of the holders of such series;

waive a continuing default or event of default in the payment of principal of or interest on the debt securities;
or

make any debt security payable at a place or in money other than that stated in the debt security, or impair the right of any holder of a debt security to bring suit as permitted by the indenture.

The right of any holder to participate in any consent required or sought pursuant to any provision of the indenture, and our obligation to obtain any such consent otherwise required from such holder, may be subject to the requirement that such holder shall have been the holder of record of debt securities with respect to which such consent is required or sought as of a record date fixed by us in accordance with the indenture.

Concerning the Trustee

The indenture will contain limitations on the rights of the trustee, should it become our creditor, to obtain payment of claims in specified cases or to realize on property received in respect of any such claim as security or otherwise. The indenture will permit the trustee to engage in other transactions; however, if it acquires any conflicting interest, it must eliminate such conflict or resign.

Table of Contents

The indenture will provide that in case an event of default occurs and is not cured, the trustee will be required, in the exercise of its power, to use the degree of care of a prudent person in similar circumstances in the conduct of such person's own affairs. The trustee shall be under no obligation to exercise any of the rights or powers vested in it by the indenture at the request or direction of any of the holders pursuant to the Indenture, unless such holders shall have offered to the trustee security or indemnity satisfactory to the trustee against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction.

No Recourse against Others

The indenture will provide that a director, officer, employee or stockholder, as such, of the Company shall not have any liability for any obligations of the Company under the debt securities or the indenture or for any claim based on, in respect of or by reason of, such obligations or their creation.

Governing Law

The laws of the State of New York will govern the indenture and the debt securities.

Table of Contents

PLAN OF DISTRIBUTION

We may sell the securities covered by this prospectus from time to time in any manner permitted under the Securities Act. Registration of the securities covered by this prospectus does not mean, however, that those securities will necessarily be offered or sold.

We may sell the securities separately or together:

through one or more underwriters or dealers in a public offering and sale by them;

directly to investors;

to dealers; or

through agents.

We may also make direct sales through subscription rights distributed to our stockholders on a pro rata basis, which may or may not be transferable. In any distribution of subscription rights to stockholders, if all of the underlying securities are not subscribed for, we may then sell the unsubscribed securities directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties.

We may sell the securities from time to time:

in one or more transactions at a fixed price or prices, which may be changed from time to time;

at market prices prevailing at the time of sale;

at prices related to such prevailing market prices; or

at negotiated prices.

Any of the prices may represent a discount from prevailing market prices. We will describe the method of distribution of the securities and the terms of the offering in the prospectus supplement. Any discounts or concessions allowed or re-allowed or paid to dealers may be changed from time to time.

If underwriters are used in the sale of any securities, the securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more of the transactions described above. Any underwritten offering may be on a best efforts or firm commitment basis. The securities may be either offered to the public through underwriting syndicates represented by managing underwriters, or directly by underwriters. Generally, the

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

In any sale of the securities, underwriters or agents may receive compensation from us or from purchasers of the securities, for whom they may act as agents, in the form of discounts, concessions or commissions. Underwriters may sell the securities to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. Underwriters, dealers and agents that participate in the distribution of the securities may be deemed to be underwriters under the Securities Act, and any discounts or commissions they receive from us and any profit on the resale of securities they realize may be deemed to be underwriting discounts and commissions under the Securities Act. Any initial public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may be changed from time to time.

Table of Contents

Each time we sell securities, we will describe the method of distribution of the securities in the prospectus supplement relating to such transaction. The applicable prospectus supplement will, where applicable:

identify any such underwriter or agent;

describe any compensation in the form of discounts, concessions, commissions or otherwise received from us by each such underwriter or agent and in the aggregate to all underwriters and agents;

identify the amounts underwritten or to be sold through the agent; and

identify the nature of the underwriter's or agent's obligation to take the securities.

We may authorize underwriters, dealers or agents to solicit offers by certain purchasers to purchase the securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. The contracts will be subject only to those conditions set forth in the prospectus supplement, and the prospectus supplement will set forth any commissions we pay for solicitation of these contracts.

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

Underwriters, dealers and agents may be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments made by the underwriters, dealers or agents, under agreements between us and the underwriters, dealers and agents.

We may grant underwriters who participate in the distribution of securities an option to purchase additional securities to cover over-allotments, if any, in connection with the distribution.

Unless otherwise specified in the related prospectus supplement, all securities we offer, other than common stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. Any common stock sold pursuant to a prospectus supplement will be listed for trading on the Nasdaq Capital Market or other principal market for our common stock. We may apply to list any series of preferred stock, debt securities or warrants on an exchange, but we are not obligated to do so. Therefore, there may not be liquidity or a trading market for any series of securities.

Any underwriter may engage in over-allotment transactions, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Over-allotment involves sales in excess of the

offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time. We make no representation or prediction as to the direction or magnitude of any effect that such transactions may have on the price of the securities. For a description of these activities, see the information under the heading Underwriting or Plan of Distribution in the applicable prospectus supplement.

Table of Contents

Underwriters, broker-dealers or agents who may become involved in the sale of the common stock may engage in transactions with and perform other services for us in the ordinary course of their business for which they receive compensation.

To comply with applicable state securities laws, the securities offered by this prospectus will be sold, if necessary, in such jurisdictions only through registered or licensed brokers or dealers. In addition, securities may not be sold in some states unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Table of Contents

EXPERTS

The consolidated financial statements of La Jolla Pharmaceutical Company as of December 31, 2015 and 2014 and for each of the years in the two-year period ended December 31, 2015 and the effectiveness of internal control over financial reporting as of December 31, 2015 incorporated in this Prospectus by reference from the La Jolla Pharmaceutical Company Annual Report on Form 10-K for the year ended December 31, 2015 have been audited by Squar Milner LLP, an independent registered public accounting firm, as stated in their reports thereon, incorporated herein by reference, and have been incorporated in this Prospectus and Registration Statement in reliance upon such reports and upon the authority of such firm as experts in accounting and auditing.

LEGAL MATTERS

Certain legal matters, including the validity of the securities offered pursuant to this registration statement, will be passed upon for us by Gibson, Dunn & Crutcher LLP, San Francisco, California.

WHERE YOU CAN FIND MORE INFORMATION

We must comply with the informational requirements of the Exchange Act and we are required to file reports and proxy statements and other information with the SEC. You may read and copy these reports, proxy statements and other information at the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies at the prescribed rates from the Public Reference Section of the SEC at its principal office in Washington, D.C. You may call the SEC at 1-800-SEC-0330 for further information about the public reference room. The SEC also maintains a website that contains reports, proxy and information statements and other information regarding issuers like us that file electronically with the SEC. You may access the SEC's web site at <http://www.sec.gov>. We maintain a website at www.lajollapharmaceuticals.com. The information contained in, or that can be accessed through, our website is not incorporated by reference herein and is not part of this prospectus.

Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete, and in each instance we refer you to the copy of the contract or document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference.

Table of Contents

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference in this prospectus the information that we file with them. Incorporation by reference means that we can disclose important information to you by referring you to other documents that are legally considered to be part of this prospectus. Later information that we file with the SEC will automatically update and supersede the information in this prospectus, any supplement and the documents listed below. Our SEC file number is 001-36282. We incorporate by reference the specific documents listed below and any future filings made with the SEC under Section 13(a), 13(c), 14, or 15(d) of the Exchange Act until all of the shares of common stock, preferred stock, debt securities and warrant shares covered by this prospectus are sold:

The Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2015, filed on February 25, 2016 (as amended April 29, 2016);

The Company's Quarterly Reports on Form 10-Q for the quarters ended March 31, 2016, June 30, 2016 and September 30, 2016, filed on May 6, 2016, August 8, 2016 and November 3, 2016;

The Company's Current Reports on Form 8-K filed on January 11, 2016, August 26, 2016, September 8, 2016 and September 19, 2016;

The description of the Company's Common Stock contained in its registration statement on Form 8-A (Registration No. 001-36282), filed on January 28, 2014, including any amendments or reports filed for the purpose of updating such description; and

All documents filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, after the filing date of the original Registration Statement and prior to effectiveness of the registration statement of which this prospectus is a part, provided that all documents furnished by the Company to the SEC and not filed are not deemed incorporated by reference herein.

We will furnish without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, a copy of any document incorporated by reference. Requests should be addressed to Corporate Secretary, 10182 Telesis Court, 6th Floor, San Diego, California 92121 or via telephone at (858) 207-4264.

You should rely only on the information incorporated by reference or provided in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with different information. You should not assume that the information contained in this prospectus or the accompanying prospectus supplement is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus and any accompanying prospectus supplement is delivered or securities are sold on a later date.

Nothing in this prospectus shall be deemed to incorporate information furnished but not filed with the SEC pursuant to Item 2.02 or 7.01 of Form 8-K.

Table of Contents

\$100,000,000

Common Stock

PROSPECTUS SUPPLEMENT

Joint Book-Running Managers

J.P. Morgan

Cowen and Company

, 2017