Filed Pursuant to Rule 424(b)(5)
Registration No. 333-196255

Prospectus Supplement
(to Prospectus dated June 26, 2014)

rexahn PHARMACEUTICALS

24,000,000 shares of common stock
Warrants to purchase 18,000,000 shares of common stock

Pursuant to this prospectus supplement and the accompanying prospectus, we are offering 24,000,000 shares of our common stock, par value $0.0001 per share, and common stock purchase warrants, or warrants, to purchase up to 18,000,000 shares of our common stock. The common stock and warrants will be sold in units, with each unit consisting of one share of common stock and a warrant to purchase 0.75 of a share of common stock. The warrants have an exercise price of $0.30 per whole share of common stock. Each unit will be sold to investors in this offering at a negotiated price of $0.25 per unit. The shares of common stock and warrants will be issued separately but can only be purchased together in this offering.

Our common stock is listed on the NYSE MKT under the symbol "RNN." On September 13, 2016, the last reported sale price of our common stock on the NYSE MKT was $0.26 per share. The warrants are not and will not be listed on any national securities exchange or other trading market.

Investing in our securities involves significant risks. Please read the information contained in or incorporated by reference under the heading "Risk Factors" beginning on page S-4 of this prospectus supplement, and under similar headings in other documents filed after the date hereof and incorporated by reference into this prospectus supplement and the accompanying prospectus.

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.

We have retained Rodman & Renshaw, a unit of H.C. Wainwright & Co., LLC, or Wainwright or the placement agent, to act as placement agent in connection with the units offered by this prospectus supplement. The placement agent has agreed to use its reasonable efforts to sell the securities offered by this prospectus supplement. We have agreed to pay the placement agent the placement agent fees set forth in the table below, which assumes that we sell all of the units we are offering, and we have agreed to issue the placement agent a warrant to purchase up to an aggregate of 1,440,000 shares of our common stock at an exercise price of $0.3125 per share, as described under the "Plan of Distribution."

	Per Unit	Total
Public offering price	$ 0.2500	$ 6,000,000
Placement agent fees(1)	$ 0.0138	$ 331,200
Proceeds, before expenses, to us(2)	$ 0.2362	$ 5,668,800

(1) We have agreed to reimburse the placement agent for certain of its expenses as described under the "Plan of Distribution" on page S-12 of this prospectus supplement.
(2) The amount of the offering proceeds to us presented in this table does not give effect to any exercise of the warrants being issued in this offering.

Delivery of the shares and warrants will take place on or about September 19, 2016, subject to the satisfaction of certain conditions.

Rodman & Renshaw
a unit of H.C. Wainwright & Co.

September 14, 2016

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus are part of a shelf registration statement on Form S-3 (File No. 333-196255) that we filed with the Securities and Exchange Commission, or SEC, on June 18, 2014 and was declared effective on June 26, 2014, pursuant to which we may from time to time offer various securities in one or more offerings.

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus, including the documents incorporated by reference into the accompanying prospectus, provides more general information, some of which may not apply to this offering. Generally, when we refer to this prospectus, we are referring to the combined document consisting of this prospectus supplement and the accompanying prospectus. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or any document incorporated by reference into this prospectus, on the other hand, you should rely on the prospectus supplement unless the document incorporated by reference has a later date than this prospectus supplement, in which case you should rely on the document with the later date.

We have not, and the placement agent has not, authorized anyone to provide you with information other than that contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering. Neither we nor the placement agent take any responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. You should not assume that the information contained or incorporated in this prospectus supplement and the accompanying prospectus is accurate as of any date other than their respective dates, regardless of the time of delivery. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus that we have authorized for use in connection with this offering when making your investment decision. We are not, and the placement agent is not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted.

Unless the context otherwise requires or as otherwise expressly stated, references in this prospectus to "the Company," “Rexahn,” “we,” “us,” “our” and similar terms refer to Rexahn Pharmaceuticals, Inc.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus supplement and the accompanying prospectus. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our common stock. For a more complete understanding of Rexahn and this offering, we encourage you to read and consider carefully the more detailed information in this prospectus supplement and the accompanying prospectus, including the information incorporated by reference in this prospectus supplement and the accompanying prospectus, and the information included in any free writing prospectus that we have authorized for use in connection with this offering, including the information referred to under the heading "Risk Factors" in this prospectus supplement beginning on page S-4.

Our Company

We are a clinical stage biopharmaceutical company dedicated to the discovery, development and commercialization of innovative treatments for cancer. Our mission is to improve the lives of cancer patients by developing next-generation cancer therapies that are designed to maximize efficacy while minimizing the toxicity and side effects traditionally associated with cancer treatment. Our clinical pipeline features one product candidate in Phase II clinical development, one product candidate in Phase Ib/IIa clinical development, one product candidate in Phase I clinical development and additional compounds in pre-clinical development. Our strategy is to continue building a significant pipeline of innovative oncology product candidates that we intend to commercialize alone or with partners. Our three clinical stage drug candidates in active development are Archexin®, RX-3117 and Supinoxin™ (RX-5902).

- Archexin is a potential best-in-class, potent inhibitor of the protein kinase Akt-1, which we believe plays a critical role in cancer cell proliferation, survival, angiogenesis, metastasis and drug resistance. Archexin has received "orphan drug" designation from the U.S. Food and Drug Administration (the "FDA") for renal cell carcinoma ("RCC"), glioblastoma, ovarian cancer, stomach cancer and pancreatic cancer. Orphan drug designation provides tax incentives for clinical research and a waiver from user fees under certain circumstances. In addition, an orphan drug receives seven years of exclusivity after approval, during which the FDA generally cannot approve another product with the same active moiety for the same indication. We have completed a pilot Phase IIa clinical trial of Archexin for the treatment of pancreatic cancer. We are currently conducting a Phase IIa proof-of-concept clinical trial of Archexin in patients with metastatic renal cell carcinoma to evaluate its safety and efficacy in combination with everolimus. In January 2016, we completed Stage 1 of the study and commenced enrollment in Stage 2, which is a randomized, open-label, two-arm dose expansion study of everolimus versus Archexin in combination with everolimus to determine safety and efficacy of the combination. The results from Stage 1 showed that in metastatic RCC patients who have previously received multiple anti-cancer therapies, Archexin treatment produced both stable disease (which persisted for up to 383 days) and a reduction in tumor burden.

- *RX-3117* is a small molecule nucleoside compound that we believe has therapeutic potential in a broad range of cancers, including pancreatic, bladder, colon, and lung cancer. RX-3117 has received orphan drug designation from the FDA for pancreatic cancer. We completed an exploratory Phase I clinical study of RX-3117 that showed a level of oral bioavailability of RX-3117 in humans with no adverse effects reported. In June 2016, we announced final results of a Phase Ib clinical trial to study the safety and efficacy of RX-3117 in patients with solid tumors. At the doses tested, RX-3117, administered orally, appeared to be safe and well tolerated with a predictable pharmacokinetic profile for an orally-administered route of therapy. In addition, evidence of potential clinical activity was seen in the Phase Ib clinical trial, with evidence of tumor burden reduction observed in three patients and stable disease observed in 12 patients persisting up to 276 days. We have identified the maximum tolerated dose ("MTD") of RX-3117, which we are now evaluating in a Phase Ib/IIa proof-of-concept clinical trial in patients with relapsed or refractory pancreatic cancer or advanced bladder cancer. On September 12, 2016, we announced that we had initiated Stage 2 of the trial in patients with relapsed or refractory metastatc pancreatic cancer based on satisfying predefined criteria for preliminary efficacy for Stage 1 of the trial.

- *Supinoxin*, or RX-5902, is a potential first-in-class small molecule inhibitor of phosphorylated-p68, a protein that we believe plays a key role in cancer cell growth, progression and metastasis. We are currently conducting a Phase I clinical trial of Supinoxin to evaluate its safety and efficacy in patients with solid tumors. Preliminary results from the Phase I clinical trial of Supinoxin presented in September 2015 showed that, at the dose levels tested to date, Supinoxin administered orally appeared to be safe and well tolerated with no Grade 3 or Grade 4 adverse events and several unrelated Grade 2 adverse events. Pharmacokinetic analyses of the data show both a predictable and desirable pharmacokinetic profile for an orally-administered route of therapy. In addition, clinical evidence of single-agent activity of Supinoxin was observed in five patients who showed stable disease persisting up to 732 days as of May 25, 2016. We plan to commence a Phase Ib/IIa clinical study to evaluate the safety and efficacy of Supinoxin in patients with triple negative breast cancer and relapsed/refractory ovarian cancer.

We also have one drug candidate in pre-clinical development: RX-21101, an N-(2-Hydroxypropyl) methacrylamide-docetaxel-folate that we believe may provide increased efficacy against tumors with potentially fewer side effects as a result of specific tumor targeting and increased stability in the body. RX-21101 has been selected by the National Cancer Institute's Nanotechnology Characterization Laboratory for its preclinical characterization program to facilitate advancement of RX-21101 towards human clinical trials.

Corporate Information

Our principal corporate office is located at 15245 Shady Grove Road, Suite 455, Rockville, Maryland 20850. Our telephone number is (240) 268-5300. Our website is http://www.rexahn.com. Information found on or accessible through our website is not incorporated into this prospectus supplement or the accompanying prospectus and does not constitute part of this prospectus supplement or the accompanying prospectus.

The Offering	
Common stock we are offering	24,000,000 shares.
Common stock to be outstanding after this offering	237,233,785 shares (as more fully described in the notes following this table).
Warrants we are offering	We are offering warrants to purchase 18,000,000 shares of common stock. Each warrant has an exercise price of $0.30 per share, is exercisable beginning six months after the date of issuance and has a term of five years from the initial exercise date. This prospectus supplement also relates to the offering of the shares of common stock issuable upon exercise of the warrants. There is currently no market for the warrants and none is expected to develop after this offering. We do not intend to list the warrants on any national securities exchange or other trading market.
Use of proceeds	We expect to use the net proceeds from this offering for further development of our lead clinical programs, including the funding of our clinical development programs for Archexin, RX-3117 and Supinoxin (RX-5902) and for working capital and general corporate purposes. See “Use of Proceeds” on page S-7 of this prospectus supplement.
Risk Factors	Investing in our securities involves significant risks. Please read the information contained in or incorporated by reference under the heading “Risk Factors” beginning on page S-4 of this prospectus supplement, and under similar headings in other documents filed after the date hereof and incorporated by reference into this prospectus supplement and the accompanying prospectus.
NYSE MKT symbol	RNN

The number of shares of common stock shown above to be outstanding after this offering is based on 213,233,785 shares outstanding as of June 30, 2016 and excludes:

- 16,384,739 shares of our common stock subject to outstanding options having a weighted average exercise price of $0.68 per share;
- 5,746,261 shares of our common stock reserved for future issuance pursuant to our existing stock option plan;
- 38,991,904 shares of our common stock that have been reserved for issuance upon exercise of outstanding warrants having a weighted average exercise price of $0.68 per share;
- 18,000,000 shares of our common stock issuable upon the exercise of warrants offered hereby; and
- 1,440,000 shares of our common stock issuable upon the exercise of the warrants being issued to the placement agent in connection with this offering.

RISK FACTORS

Investing in our common stock involves risks. Before deciding whether to invest in our common stock, you should consider carefully the risk factors discussed below and those contained in the section entitled "Risk Factors" contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2015, as filed with the SEC, on March 14, 2016, which is incorporated herein by reference in its entirety, together with other information in this prospectus supplement and the accompanying prospectus, and the information and documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering. If any of these risks actually occurs, 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. Please also read carefully the section below entitled "Special Note Regarding Forward-Looking Statements."

Risks Related to This Offering

Management will have broad discretion as to the use of the proceeds from this offering, and we may not use the proceeds effectively.

Our management will have broad discretion as to the use of the net proceeds from any offering by us and could use them for purposes other than those contemplated at the time of this offering. Accordingly, you will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the proceeds will be invested in a way that does not yield a favorable, or any, return for Rexahn.

You will experience immediate and substantial dilution in the net tangible book value per share of the common stock you purchase.

Since the public offering price per unit of the securities being offered is substantially higher than the net tangible book value per share of our common stock, you will suffer substantial dilution in the net tangible book value of the common stock you purchase in this offering. Based on the public offering price of $0.25 per unit, attributing no value to the warrants, if you purchase units in this offering, you will suffer immediate and substantial dilution of $0.16 per share in the net tangible book value of the common stock. In the event that you exercise your warrants, you will experience additional dilution to the extent that the exercise price of those warrants is higher than the book value per share of our common stock. See the section entitled "Dilution" below for a more detailed discussion of the dilution you would incur if you purchase securities in this offering.

We will require additional capital funding, the receipt of which may impair the value of our common stock.

Our future capital requirements depend on many factors, including our research, development, sales and marketing activities. We will need to raise additional capital through public or private equity or debt offerings or through arrangements with strategic partners or other sources in order to continue to develop our drug candidates. There can be no assurance that additional capital will be available when needed or on terms satisfactory to us, if at all. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution and the new equity securities may have greater rights, preferences or privileges than our existing common stock.

Risks Related to the Warrants

There is no public market for the warrants to purchase common stock being offered in this offering.

There is no established public trading market for the warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants on any national securities exchange or other trading market. Without an active market, the liquidity of the warrants will be limited.

Holders of our warrants will have no rights as a common stockholder until such holders exercise their warrants and acquire our common stock.

Until you acquire shares of our common stock upon exercise of your warrants, you will have no rights with respect to the shares of our common stock underlying such warrants. Upon exercise of your warrants, you will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

The warrants will not be immediately exercisable and may never have any value.

The warrants comprising part of the units being sold in this offering, which have an exercise price of $0.30 per share of common stock, will not be exercisable until six months after the date they are issued and will expire on the five-year anniversary of the initial exercise date. In the event our common stock price does not exceed the per share exercise price of the warrants during the period when the warrants are exercisable, the warrants will not have any value.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Any statements in this prospectus supplement, the accompanying prospectus and the information incorporated herein and therein by reference relating to future financial or business performance, conditions or strategies and other financial and business matters, including expectations regarding future revenues and operating expenses, are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements that are not descriptions of historical facts are forward-looking statements and are based on management's estimates, assumptions, and projections that are subject to risks and uncertainties. These statements can generally be identified by the use of forward-looking words such as "believe," "expect," "intend," "may," "will," "should," "anticipate," "estimate" or similar terminology. Although we believe that the expectations reflected in our forward-looking statements are reasonable as of the date we make them, actual results could differ materially from those currently anticipated due to a number of factors, including risks relating to:

- our understandings and beliefs regarding the role of certain biological mechanisms and processes in cancer;
- our drug candidates being in early stages of development, including in pre-clinical development;
- our ability to initially develop drug candidates for orphan indications to reduce the time-to-market and take advantage of certain incentives provided by the FDA;
- our ability to transition from our initial focus on developing drug candidates for orphan indications to candidates for more highly prevalent indications;
- our ability to successfully and timely complete clinical trials for our drug candidates in clinical development;
- uncertainties related to the timing, results and analyses related to our drug candidates in pre-clinical development;
- our ability to obtain the necessary U.S. and international regulatory approvals for our drug candidates;
- our reliance on third-party contract research organizations and other investigators and collaborators for certain research and development services;
- our ability to maintain or engage third-party manufacturers to manufacture, supply, store and distribute supplies of our drug candidates for our clinical trials;
- our ability to form strategic alliances and partnerships with pharmaceutical companies and other partners for sales and marketing of certain of our product candidates;
- demand for and market acceptance of our drug candidates;
- the scope and validity of our intellectual property protection for our drug candidates and our ability to develop our candidates without infringing the intellectual property rights of others; and
- our lack of profitability and the need for additional capital to operate our business.

Further information on the factors and risks that could affect our business, financial condition and results of operations, are set forth in this prospectus supplement under "Risk Factors" and in our filings with the SEC, which are available at *http://www.sec.gov*. Any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Except as required by law, we undertake no obligation to publicly revise our forward-looking statements to reflect events or circumstances that arise after the date of this prospectus supplement or the date of documents incorporated by reference in this prospectus supplement.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of the 24,000,000 units offered by this prospectus supplement, after deducting placement agent fees and expenses, will be approximately $5.5 million, assuming that we sell the maximum number of units we are offering pursuant to this prospectus supplement. Because there is no minimum offering amount required as a condition to the closing of this offering, the actual number of units sold, placement agent fees and proceeds to us are not presently determinable and may be substantially less than the maximum amount set forth above.

We intend to use the net proceeds from this offering for further development of our lead clinical programs, including the funding of our clinical development programs for Archexin, RX-3117 and Supinoxin (RX-5902) and for working capital and general corporate purposes. The amounts and timing of our use of the net proceeds from the sale of securities in this offering will depend on a number of factors, such as the timing and progress of trials of our clinical and pre-clinical product candidates and our development efforts, the timing and progress of any partnering efforts, technological advances and the competitive environment for our product candidates.

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 timing and application of these proceeds. Pending application of the net proceeds as described above, we intend to invest the net proceeds of this offering in a variety of capital preservation investments, including but not limited to short-term, interest-bearing investment grade securities, money market accounts, certificates of deposit and direct or guaranteed obligations of the U.S. government.

DILUTION

If you purchase units in this offering, you will experience dilution to the extent of the difference between the public offering price of the units (attributing no value to the warrants) and the net tangible book value per share of our common stock immediately after this offering.

Our net tangible book value as of June 30, 2016 was approximately $15.8 million, or $0.07 per share of common stock. Net tangible book value per share is equal to our total tangible assets minus total liabilities, all divided by the number of shares of common stock outstanding as of June 30, 2016.

After giving effect to the sale of 24,000,000 units at a price of $0.25 per unit, and after deducting our estimated placement agent fees and offering expenses payable by us, and attributing no value to the warrants, our as adjusted net tangible book value would have been approximately $21.4 million, or approximately $0.09 per share of common stock, as of June 30, 2016. This represents an immediate increase in net tangible book value of approximately $0.02 per share to existing stockholders and an immediate dilution of approximately $0.16 per share to new investors. The following table illustrates this calculation on a per share basis:

Public offering price per unit		$ 0.25
Net tangible book value per share as of June 30, 2016	$ 0.07	
Increase per share attributable to this offering	$ 0.02	
As adjusted net tangible book value per share as of June 30, 2016, after giving effect to this offering		$ 0.09
Dilution per share to new investors		$ 0.16

The foregoing table and discussion is based on 213,233,785 shares outstanding as of June 30, 2016 and excludes:

- 16,384,739 shares of our common stock subject to outstanding options having a weighted average exercise price of $0.68 per share;
- 5,746,261 shares of our common stock reserved for future issuance pursuant to our existing stock option plan;
- 38,991,904 shares of our common stock that have been reserved for issuance upon exercise of outstanding warrants having a weighted average exercise price of $0.68 per share;
- 18,000,000 shares of our common stock issuable upon the exercise of warrants offered hereby; and
- 1,440,000 shares of our common stock issuable upon the exercise of the warrants being issued to the placement agent in connection with this offering.

Because there is no minimum offering amount required as a condition to the closing of this offering, the dilution per share to new investors may be more than that indicated above in the event that the actual number of units sold, if any, is less than the maximum number of shares of units we are offering.

The above illustration of dilution per share to investors participating in this offering assumes no exercise of outstanding options to purchase our common stock or outstanding warrants to purchase shares of our common stock. The exercise of outstanding options and warrants having an exercise price less than the offering price will increase dilution to new investors.

DESCRIPTION OF SECURITIES

In this offering, we are offering 24,000,000 shares of common stock and warrants to purchase up to 18,000,000 shares of common stock. This prospectus supplement also relates to the offering of shares of our common stock upon the exercise, if any, of the warrants issued in this offering.

The material terms and provisions of our common stock are described under the caption "Description of Common Stock" starting on page 9 of the accompanying prospectus.

Warrants

The material terms and provisions of the warrants to purchase 18,000,000 shares of common stock being offered pursuant to this prospectus supplement and the accompanying prospectus are summarized below. This summary is subject to and qualified in its entirety by the form of warrant provided to each investor in this offering and filed on a Current Report on Form 8-K in connection with this offering.

General Terms of the Warrants

The warrants to be issued in this offering represent the rights to purchase up to 18,000,000 shares of common stock at an initial exercise price of $0.30 per share. Each warrant may be exercised at any time beginning six months after the closing of this offering (which is currently anticipated to be September 19, 2016) and from time to time thereafter through and including the five year anniversary of the initial exercise date.

Exercise

Holders of the warrants may exercise their warrants to purchase shares of our common stock on or before the expiration date by delivering (i) notice of exercise, appropriately completed and duly signed, and (ii) if such holder is not utilizing the cashless exercise provisions with respect to the warrants, payment of the exercise price for the number of shares with respect to which the warrant is being exercised. Warrants may be exercised in whole or in part, but only for full shares of common stock. We provide certain rescission and buy-in rights to a holder if we fail to deliver the shares of common stock underlying the warrants by the third trading day after the date on which delivery of the stock certificate is required by the warrant. With respect to the rescission rights, the holder has the right to rescind the exercise if stock certificates are not timely delivered. The buy-in rights apply if after the third trading day on which delivery of the stock certificate is required by the warrant, the holder purchases (in an open market transaction or otherwise) shares of our common stock to deliver in satisfaction of a sale by the holder of the warrant shares that the holder anticipated receiving from us upon exercise of the warrant. In this event, we will:

- pay in cash to the holder the amount equal to the excess (if any) of the buy-in price over the product of (A) the number of warrant shares that we were required to deliver to the holder, times (B) the price at which the sell order giving rise to holder's purchase obligation was executed; and

- at the election of the holder, either (A) reinstate the portion of the warrant as to such number of shares of common stock, or (B) deliver to the holder a certificate or certificates representing such number of shares of common stock.

In addition, the warrant holders are entitled to a "cashless exercise" option if, at any time of exercise, there is no effective registration statement registering, or no current prospectus available for, the issuance or resale of the shares of common stock underlying the warrants. This option entitles the warrant holders to elect to receive fewer shares of common stock without paying the cash exercise price. The number of shares to be issued would be determined by a formula based on the total number of shares with respect to which the warrant is being exercised, the volume weighted average of the prices per share of our common stock on the trading date immediately prior to the date of exercise and the applicable exercise price of the warrants issued in this offering.

The shares of common stock issuable on exercise of the warrants will be, when issued and paid for in accordance with the warrants, duly and validly authorized, issued and fully paid and non-assessable. We will authorize and reserve at least that number of shares of common stock equal to the number of shares of common stock issuable upon exercise of all outstanding warrants.

Fundamental Transactions

If, at any time while the warrants are outstanding, we, directly or indirectly, (1) consolidate or merge with or into another person, (2) sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets or (3) are subject to or complete a tender or exchange offer pursuant to which holders of our common stock are permitted to tender or exchange their shares for other securities, cash or property and which has been accepted by 50% or more of the outstanding common stock, (4) effect any reclassification, reorganization or recapitalization of our common stock or any compulsory share exchange pursuant to which our common stock is effectively converted into or exchanged for other securities, cash or property, or (5) in one or more transactions consummate a stock purchase agreement or other business combination where the other party acquires more than 50% of our outstanding shares of common stock (each, a "Fundamental Transaction"), then the holder shall have the right thereafter to receive, upon exercise of the warrant, the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of warrant shares then issuable upon exercise of the warrant, and any additional consideration payable as part of the Fundamental Transaction. Any successor to us or surviving entity shall assume the obligations under the warrant. In addition, the holders of the warrants will have the right to require us or our successor, to repurchase the remaining unexercised portion of the warrants at their then-current Black-Scholes Value (as defined) exercisable solely within thirty (30) days of the closing of a Fundamental Transaction.

Subsequent Rights Offerings

If, at any time while the warrants are outstanding, we issue rights, options or warrants to all holders of our common stock entitling them to purchase our common stock, then the holders of the warrants will be entitled to acquire those rights, options and warrants on the basis of the number of shares of common stock acquirable upon complete exercise of the warrants.

Pro Rata Distributions

If, at any time while the warrants are outstanding, we make a dividend or distribution of assets or rights to acquire assets to all holders of our common stock, the holders of the warrants will be entitled to participate in the dividend or distribution of assets or rights to acquire assets on the basis of the number of shares of common stock acquirable upon complete exercise of the warrants.

Certain Adjustments

The exercise price and the number of shares of common stock purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our common stock.

Delivery of Shares

Upon the holder's exercise of a warrant, we will promptly, but in no event later than three (3) trading days after the holder delivers to us a notice of exercise, or the Warrant Share Delivery Date, issue and deliver, or cause to be issued and delivered, the shares of common stock issuable upon exercise of the warrant. We will, if either there is an effective registration statement permitting the issuance of the warrant shares to or resale of the warrant shares by holder or the warrant is being exercised via cashless exercise, issue and deliver the shares electronically through The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System (DWAC) or another established clearing corporation performing similar functions.

Notice of Corporate Action

We will provide notice to holders of the warrants to provide them with the opportunity to exercise their warrants and hold common stock in order to participate in or vote on the following corporate events:

- if we shall take a record of the holders of our common stock for the purpose of entitling them to receive a dividend or other distribution, or any right to subscribe for or purchase any shares of stock of any class or any other right;

- any reclassification of our common stock, any consolidation or merger to which we are a party, any sale or transfer of all or substantially all of our assets, or any compulsory share exchange whereby our common is converted into other securities, cash or property; or

- a voluntary or involuntary dissolution, liquidation or winding up.

Limitations on Exercise

The number of warrant shares that may be acquired by any holder upon any exercise of the warrant shall be limited to the extent necessary to insure that, following such exercise (or other issuance), the total number of shares of common stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of common stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act, does not exceed 4.99% of the total number of issued and outstanding shares of common stock (including for such purpose the shares of common stock issuable upon such exercise), or beneficial ownership limitation. The holder may elect to change this beneficial ownership limitation from 4.99% to 9.99% of the total number of issued and outstanding shares of common stock (including for such purpose the shares of common stock issuable upon such exercise) upon 61 days' prior written notice.

Placement Agent Warrant

In addition, we have agreed to issue to the placement agent warrants to purchase up to 6% of the aggregate number of shares of common stock sold in this offering. The placement agent warrants shall have substantially the same terms as the warrants issued to the purchasers in this offering, except that the placement agent warrants will expire on September 14, 2021 (five years from the date of this prospectus supplement) and such placement agent warrants shall have an exercise price equal to 125% of the offering price. The placement agent warrants will not be transferable for 180 days from the date of the closing of the offering. The warrants and the shares underlying the warrants issuable to the placement agent in the offering are not being registered under the registration statement of which this prospectus forms a part.

Additional Provisions

The above summary of certain terms and provisions of the warrants is qualified in its entirety by reference to the detailed provisions of the warrants, the form of which will be filed as an exhibit to a Current Report on Form 8-K that is incorporated herein by reference. We are not required to issue fractional shares upon the exercise of the warrants. No holders of the warrants will possess any rights as a stockholder under those warrants until the holder exercises those warrants, except as set forth in the warrants. The warrants may be transferred independent of the common stock they were issued with, on a form of assignment, subject to all applicable laws.

PLAN OF DISTRIBUTION

Pursuant to an engagement agreement dated September 13, 2016, we have engaged Rodman & Renshaw, a unit of H.C. Wainwright & Co., LLC, or Wainwright or the placement agent, to act as our exclusive placement agent in connection with this offering of our shares of common stock and warrants pursuant to this prospectus supplement and accompanying prospectus. Under the terms of the engagement agreement, the placement agent has agreed to be our exclusive placement agent, on a reasonable best efforts basis, in connection with the issuance and sale by us of our shares of common stock and warrants in this takedown from our shelf registration statement. The terms of this offering were subject to market conditions and negotiations between us, the placement agent and prospective purchasers. The engagement agreement provides that the obligations of the placement agent are subject to certain conditions precedent, including the absence of any material adverse change in our business and the receipt of certain certificates, opinions and letters from us and our counsel. The engagement agreement does not give rise to any commitment by the placement agent to purchase any of our shares of common stock and warrants, and the placement agent will have no authority to bind us by virtue of the engagement agreement. Further, the placement agent does not guarantee that it will be able to raise new capital in any prospective offering.

We will enter into securities purchase agreements directly with investors in connection with this offering, and we will only sell to investors who have entered into securities purchase agreements.

We will deliver the shares of common stock being issued to the purchasers electronically upon receipt of purchaser funds for the purchase of the shares of our common stock and warrants offered pursuant to this prospectus supplement. The warrants will be issued in registered physical form. We expect to deliver the shares of our common stock and warrants being offered pursuant to this prospectus supplement on or about September 19, 2016.

We have agreed to pay the placement agent a total cash fee equal to 6% of the gross proceeds of this offering, subject to an 8% reduction in connection with the Company's engagement of FBR Capital Markets & Co., or FBR, for financial advisory services in connection with this offering. In addition, we agreed to issue placement agent warrants to the placement agent to purchase up to 6% of the shares of common stock sold in this offering. The placement agent warrants will be substantially on the same terms as the warrants offered hereby, except that the placement agent warrants will expire on September 14, 2021 (five years from the date of this prospectus supplement) and will have an exercise price equal to 125% of the offering price. Pursuant to FINRA Rule 5110(g), the placement agent warrants and any shares issued upon exercise of the placement agent warrants shall not be sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of the securities by any person for a period of 180 days immediately following the date of effectiveness or commencement of sales of this offering, except the transfer of any security: (i) by operation of law or by reason of our reorganization; (ii) to any FINRA member firm participating in the offering and the officers or partners thereof, if all securities so transferred remain subject to the lock-up restriction set forth above for the remainder of the time period; (iii) if the aggregate amount of our securities held by the placement agent or related persons do not exceed 1% of the securities being offered; (iv) that is beneficially owned on a pro-rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund and the participating members in the aggregate do not own more than 10% of the equity in the fund; or (v) the exercise or conversion of any security, if all securities remain subject to the lock-up restriction set forth above for the remainder of the time period.

We will also pay the placement agent a non-accountable expense allowance of $30,000.

In addition to the fees and expenses payable to the placement agent, we are also paying a financial advisory fee to FBR of $28,800 for financial advisory services. Neither FBR nor any of its affiliates is engaged in the distribution in this offering.

We have agreed to indemnify the placement agent and specified other persons against some civil liabilities, including liabilities under the Securities Act of 1933, as amended, or the Securities Act, and the Securities Exchange Act of 1934, as amended, or the Exchange Act, and to contribute to payments that the placement agent may be required to make in respect of such liabilities.

The placement agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the resale of the securities sold by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, the placement agent would be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 415(a)(4) under the Securities Act and Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of shares of common stock and warrants by the placement agent acting as principal. Under these rules and regulations, the placement agent:

- may not engage in any stabilization activity in connection with our securities; and
- may not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until it has completed its participation in the distribution.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to another document that we have filed separately with the SEC. The information incorporated by reference is considered to be part of this prospectus supplement. Information in this prospectus supplement supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus supplement, while information that we file later with the SEC will automatically update and supersede the information in this prospectus supplement and the accompanying prospectus. We incorporate by reference our documents listed below and any future filings made by us with the SEC (File No. 001-34079) under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of this prospectus supplement and until we file a post-effective amendment that indicates the termination of the offering of the securities made by this prospectus supplement. We are not, however, incorporating by reference any documents or portions thereof, whether specifically listed below or filed in the future, that are not deemed "filed" with the SEC, including any information furnished pursuant to Item 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K.

- our Annual Report on Form 10-K for the year ended December 31, 2015, filed with the SEC on March 14, 2016 (including the portions of our definitive Proxy Statement on Schedule 14A filed with the SEC on April 18, 2016 incorporated by reference therein);
- our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2016, filed with the SEC on May 6, 2016, and for the quarter ended June 30, 2016, filed with the SEC on August 5, 2016;
- our Current Reports on Form 8-K filed with the SEC on February 26, 2016, March 2, 2016, June 10, 2016 and September 14, 2016; and
- the description of our common stock contained in our Registration Statement on Form 8-A filed under the Exchange Act on May 23, 2008, including any amendment or report filed for the purpose of updating such description.

Information in such future filings updates and supplements the information provided in this prospectus supplement and the accompanying prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

We will furnish without charge to you, upon written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. You should direct any requests for documents to:

Tae Heum (Ted) Jeong
Senior Vice President of Finance & Chief Financial Officer
Rexahn Pharmaceuticals, Inc.
15245 Shady Grove Road, Suite 455
Rockville, Maryland 20850
(240) 268-5300
ted@rexahn.com

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Exchange Act, and file annual, quarterly and current reports, proxy statements and other information required by the Exchange Act with the SEC. You may read and copy any reports, proxy statements and other information we file at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. You may also access filed documents at the SEC's web site at *http://www.sec.gov.*

We are incorporating by reference some information about us that we file with the SEC. We are disclosing important information to you by referencing those filed documents. Any information that we reference this way is considered part of this prospectus. The information in this prospectus supplement supersedes statements made in the accompanying prospectus and information incorporated by reference that we have filed with the SEC prior to the date of this prospectus supplement, while information that we file with the SEC after the date of this prospectus supplement that is incorporated by reference will automatically update and supersede this information.

LEGAL MATTERS

The validity of the common stock offered hereby has been passed upon for us by Hogan Lovells US LLP, Baltimore, Maryland. Ellenoff Grossman & Schole LLP, New York, New York is representing Wainwright in connection with this offering.

EXPERTS

The financial statements of Rexahn Pharmaceuticals, Inc. appearing in our Annual Report on Form 10-K for the year ended December 31, 2015, and the effectiveness of our internal control over financial reporting as of December 31, 2015, have been audited by Baker Tilly Virchow Krause, LLP, an independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such financial statements are incorporated herein by reference in reliance upon such reports given on the authority of Baker Tilly Virchow Krause, LLP as experts in accounting and auditing.

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PROSPECTUS

UP TO $150,000,000 OF OUR
COMMON STOCK
PREFERRED STOCK
WARRANTS
UNITS

We may from time to time offer up to $150,000,000 in total of:

- shares of our common stock, par value $0.0001 per share;
- shares of our preferred stock, par value $0.0001 per share;
- warrants to purchase shares of common stock or preferred stock; or
- units (any combination of our common stock, preferred stock or warrants).

We may offer the common stock, preferred stock, warrants and units separately or together, in separate series, in amounts, at prices and on terms to be set forth in one or more supplements to this prospectus. The preferred stock and warrants we may offer may be convertible into or exercisable or exchangeable for common or preferred stock or other securities of ours or equity securities of one or more other entities. When we decide to issue securities, we will provide you with the specific terms and the public offering price of the securities in prospectus supplements. In the case of shares of preferred stock, these terms will include, as applicable, the specific title and stated value, and any dividend, liquidation, redemption, conversion, voting and other rights. You should read this prospectus and any applicable prospectus supplement carefully before you invest. This prospectus may not be used to offer or sell securities unless accompanied by a prospectus supplement.

Our common stock is listed on the NYSE MKT and traded under the symbol “RNN.” None of the other securities are currently publicly traded. We may sell these securities to or through underwriters and also to other purchasers or through agents. We will set forth the names of any underwriters or agents in an accompanying prospectus supplement, if applicable.

Investing in our securities involves risks. Please see “Risk Factors” on page 4 for more information. You should read carefully this prospectus, the documents incorporated by reference in this prospectus and any prospectus supplement before you invest.

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

The date of this prospectus is June 26, 2014

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission ("SEC") using a "shelf" registration process. Under this shelf registration process, we may from time to time offer up to $150,000,000 in total of (i) shares of our common stock, par value $0.0001 per share, (ii) shares of our preferred stock, par value $0.0001 per share, in one or more series, (iii) warrants to purchase shares of common stock or preferred stock or (iv) any combination of our common stock, preferred stock or warrants, either individually or as units consisting of one or more of the foregoing, each at prices and on terms to be determined at the time of sale. The common stock, preferred stock, warrants and units are collectively referred to in this prospectus as "securities." The securities offered pursuant to this prospectus may be one or more series of issuances and the total offering price of the securities will not exceed $150,000,000 or its equivalent (based on the applicable exchange rate at the time of the sale) in one or more foreign currencies, currency units or composite currencies as shall be designated by us.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement with specific information about the terms of that offering and may also provide a free writing prospectus. The prospectus supplement or free writing prospectus may also add, update or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement. You should read both this prospectus and any prospectus supplement together with the additional information described below under the heading "Where You Can Find More Information" and "Incorporation of Certain Information by Reference."

The registration statement that contains this prospectus, including the exhibits to the registration statement and the information incorporated by reference, contains additional information about the securities offered under this prospectus. That registration statement can be read at the SEC website or at the SEC offices mentioned below under the heading "Where You Can Find More Information."

We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus, any accompanying supplement to this prospectus or any free writing prospectus that may be incorporated by reference into this prospectus or any prospectus supplement or any documents incorporated by reference into this prospectus or any prospectus supplement. We take no responsibility for any information or representation not contained or incorporated by reference in this prospectus or any accompanying prospectus supplement or any free writing prospectus. Neither this prospectus nor any accompanying prospectus supplement nor any free writing prospectus constitute an offer to sell or the solicitation of an offer to buy any securities other than the common stock to which they relate, nor do this prospectus or any accompanying prospectus supplement or any free writing prospectus constitute an offer to sell or the solicitation of an offer to buy common stock in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus or any accompanying prospectus supplement or any free writing prospectus or any other offering materials is accurate on any date subsequent to the date set forth on the front of such 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 or any accompanying prospectus supplement or any free writing prospectus is delivered or securities are sold on a later date.

Unless the context otherwise requires or as otherwise expressly stated, references in this prospectus to the "Company," "Rexahn," "we," "us," "our" and similar terms refer to Rexahn Pharmaceuticals, Inc.

SUMMARY

This summary contains a general summary of the information contained in this prospectus. It may not include all the information that is important to you. You should read the entire prospectus, the prospectus supplement delivered with the prospectus, if any, and the documents incorporated by reference before making an investment decision.

Our Company

We are a clinical development stage biopharmaceutical company dedicated to the discovery, development and commercialization of innovative treatments for cancer patients that target specific proteins that are over expressed in cancer cells and not present in normal healthy tissues resulting in increased efficacy and reduced side effects. This approach differs from existing chemotherapeutic agents that inhibit the growth of both cancer cells and normal healthy tissues at similar doses. Our pipeline features one oncology candidate in Phase II clinical trials, two oncology candidates in Phase I clinical trials, two drug candidates not currently being actively developed and several other drug candidates in pre-clinical development. Our strategy is to continue building a significant product pipeline of innovative drug candidates that we will commercialize alone or with partners. We intend to initially develop drug candidates for cancers that are orphan indications and then expand into more highly prevalent cancers.

Since our inception, our efforts and resources have been focused primarily on developing our pharmaceutical technologies, raising capital and recruiting personnel. As a development stage company, we have no product sales to date, and we will not generate any product sales until we receive approval from the Food and Drug Administration (the "FDA") or equivalent foreign regulatory bodies to begin selling our pharmaceutical candidates. Our major sources of working capital have been proceeds from various private financings, primarily private sales of common stock and debt securities and collaboration agreements with our strategic investors.

Our three clinical stage drug candidates in active development are Archexin, RX-3117 and Supinoxin (RX-5902).

Archexin®

Archexin is a potential best-in-class, potent inhibitor of the protein kinase phosphorylated Akt-1, which is over expressed in cancer cells and which we believe plays a critical role in cancer cell proliferation, survival, angiogenesis, metastasis and drug resistance. Archexin has received "orphan drug" designation from the FDA, for renal cell carcinoma, ("RCC"), glioblastoma, ovarian cancer, stomach cancer and pancreatic cancer. That designation provides tax incentives for clinical research and a waiver of user fees. In addition, a drug that is approved for its orphan-designated use receives seven years of exclusivity after approval, during which the FDA generally cannot approve another product with the same active moiety for the same indication.

In August 2012, we announced top line results of an open label 2-stage Phase IIa clinical trial for Archexin that was designed to assess the safety and efficacy of Archexin in combination with gemcitabine. Gemcitabine is used to treat pancreatic, breast, ovarian and lung cancers. Gemcitabine is a member of a group of chemotherapy drugs known as anti-metabolites. It prevents cells from making DNA and RNA, which stops cell growth and causes cells to die. Stage 1 was the dose-finding portion of the study, and Stage 2 was the dose-expansion portion of the study using the dose identified in Stage 1 administered with gemcitabine. The study enrolled 31 subjects aged 18 to 65 with metastatic pancreatic cancer at nine centers in the United States and India. The primary endpoint was overall survival following four cycles of therapy with a six month follow-up. For those evaluable patients, the study demonstrated that treatment with Archexin in combination with gemcitabine provided a median survival rate of 9.1 months compared to the historical survival data of 5.65 months for standard single agent gemcitabine therapy. The most frequent reported adverse events were constipation, nausea, abdominal pain and pyrexia, regardless of relatedness.

We initiated a Phase IIa clinical proof-of-concept clinical trial of Archexin in January 2014 to study its safety and efficacy in patients with metastatic RCC. In the trial, Archexin will be administered in combination with everolimus (Afinitor®), and will be conducted in two stages. The first stage will be dose ranging, with up to three cohorts of three RCC patients to determine its maximal tolerated dose ("MTD") in combination with everolimus. Once the MTD has been determined, 30 RCC patients will be randomized to either Archexin in combination with everolimus or everolimus alone, in a ratio of 2:1.

RX-3117

RX-3117 is a small molecule nucleoside compound with an anti-metabolite mechanism of action, and we believe it has therapeutic potential in a broad range of cancers including colon, lung, and pancreatic cancer. RX-3117 has also been shown to be effective in inhibiting the growth of gemcitabine-resistant human cancers and in improving overall survival in pre-clinical animal models. We completed an exploratory Phase I clinical study of RX-3117 in 2012 that demonstrated the oral bioavailability of RX-3117 in humans with no adverse effects reported in the study. In January 2014, we initiated a Phase Ib clinical trial to study the safety, tolerability, dose-limiting toxicities and MTD of RX-3117 in patients with solid tumors. Secondary endpoints will include characterizing the pharmacokinetic profile of RX-3117 and evaluating the preliminary anti-tumor effects of RX-3117. One dose cycle (30mg) has been completed and the second dose cycle (100mg) is ongoing.

Supinoxin (RX-5902)

Supinoxin is a potential first-in-class small molecule that inhibits the phosphorylation of p68 RNA helicase, a protein that we believe plays a key role in cancer growth, progression and metastasis. Phosphorylated p68, which is highly expressed in cancer cells, but not in normal cells, results in up-regulation of cancer-related genes and a subsequent proliferation or tumor growth of cancer cells. Supinoxin selectively blocks phosphorylated p68, thereby decreasing the proliferation or growth of cancer cells. In pre-clinical tissue culture models and in-vivo xenograft models, Supinoxin has demonstrated synergism with cytotoxic agents and activity against drug resistant cancer cells. In particular, in in-vivo xenograft models of human renal cell carcinoma and pancreatic cancer, treatment with Supinoxin on days 1 to 20 in mouse models produced a survival benefit beyond 65 days. In July 2012, we submitted an investigational new drug ("IND") application to the FDA for Supinoxin. We initiated a Phase I clinical trial in August 2013 to study Supinoxin's safety and efficacy in patients with solid tumors. The MTD of Supinoxin has not yet been achieved. Three dosing cycles have been completed (25, 50 and 100mg) and no drug related adverse events have been reported. The fourth dosing cycle (150 mg) is ongoing.

In addition to these drug candidates, we also have three drug candidates in pre-clinical development: Archexin-Nano, which may provide significant clinical benefits, including targeted higher cellular intake, extended circulation time, reduced drug toxicity and improved efficacy; RX-0047-Nano, which is a potent inhibitor of HIF-1α, a key transcription factor involved in cancer cell survival, metastasis and angiogenesis; and RX-21101, an (N-(2-Hydroxypropyl) methacrylamode-docetaxel-folate, which may bolster efficacy against tumors while lowering toxicity by specific tumor targeting and increased stability in the body.

In addition to our drug development, we are also working on proprietary research technologies, including our multi-target aimed ligands platform and nano-based drug delivery systems. Our unique ligand discovery platform, The Inhibitors of Multi-Expression Signals, permits us to identify potentially important targets that control multiple genes or signaling events in cancer cells. Our 3-D Gateway of Ligand Discovery integrates three-dimensional molecular modeling with databases of chemicals and proteins and ligand filtering and generation, which helps us discover novel lead compounds. Leveraging this system, we believe that we are able to effectively develop predictive models, formulate and test hypotheses for optimizing efficacy and increase drug safety and bioavailability early in the drug discovery process. Our nano-based drug delivery systems, such as those used in the multiple nanoliposomal- and nanopolymer-based anticancer drugs that we are currently testing, may increase the availability of a drug at the disease site, minimize adverse reactions and provide longer duration of action.

Principal Executive Offices

Our principal executive offices are located at 15245 Shady Grove Road, Suite 455, Rockville, Maryland 20850, and our telephone number is (240) 268-5300.

Securities We Are Offering

We may offer any of the following securities from time to time:

- shares of our common stock;
- shares of our preferred stock
- warrants to purchase shares of common stock or preferred stock; or
- units (any combination of our common stock, preferred stock or warrants).

When we use the term "securities" in this prospectus, we mean any of the securities we may offer with this prospectus, unless we say otherwise. The total dollar amount of all securities that we may issue will not exceed $150,000,000. This prospectus, including the following summary, describes the general terms that may apply to the securities. We will describe the specific terms of any particular securities that we may offer in a separate supplement to this prospectus.

Common Stock. We may offer shares of our common stock. Our common stock currently is listed on the NYSE MKT under the symbol "RNN."

Preferred Stock. We may offer shares of our preferred stock in one or more series. For any particular series we offer, the applicable prospectus supplement will describe the specific designation; the aggregate number of shares offered; the rate and periods, or manner of calculating the rate and periods, for dividends, if any; the stated value and liquidation preference amount, if any; the voting rights, if any; the terms on which the series will be convertible into or exchangeable for other securities or property, if any; the redemption terms, if any; and any other specific terms.

Warrants. We may offer warrants to purchase our common stock and preferred stock. For any particular warrants we offer, the applicable prospectus supplement will describe the underlying security; expiration date; the exercise price or the manner of determining the exercise price; the amount and kind, or the manner of determining the amount and kind, of any security to be delivered by us upon exercise; and any other specific terms. We may issue the warrants under warrant agreements between us and one or more warrant agents.

Units. We may offer any combination of one or more of the other securities described in this prospectus, together as units. In a prospectus supplement, we will describe the particular combination of securities constituting any units and any other specific terms of the units.

Listing. If any securities are to be listed or quoted on a securities exchange or quotation system, the applicable prospectus supplement will say so.

Ratio of Earnings to Combined Fixed Charges and Preferred Stock Dividends

The table below presents the ratio of earnings to combined fixed charges and preferred stock dividends and the coverage deficiency for the last five fiscal years and the three months ended March 31, 2014.

	For the Three Months Ended March 31, 2014	For the Year Ended December 31,				
		2013	2012	2011	2010	2009
Ratio of earnings to combined fixed charges and preferred stock dividends	Deficiency	Deficiency	Deficiency	Deficiency	Deficiency	Deficiency
Deficiency (in thousands)	$ (14,600)	$ (9,499)	$ (6,227)	$ (11,345)	$ (14,022)	$ (2,903)

For the three months ended March 31, 2014 and the years ended December 31, 2013, 2012, 2011, 2010 and 2009, earnings are inadequate to cover fixed charges and the dollar amount of the coverage deficiency is disclosed in the above table, in thousands.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider and evaluate all of the information contained in this prospectus, any accompanying prospectus supplement and in the documents we incorporate by reference into this prospectus and any accompanying prospectus supplement before you decide to purchase our securities. In particular, you should carefully consider and evaluate the risks and uncertainties described under the heading "Risk Factors" in each of our Annual Report on Form 10-K for the fiscal year ended December 31, 2013 and our Quarterly Report on Form 10-Q for the three-month period ended March 31, 2014, as well as any risks described in any applicable prospectus supplement, before deciding whether to buy our securities. Any of the risks and uncertainties set forth in those reports, as updated by annual, quarterly and other reports and documents that we file with the SEC and incorporate by reference into this prospectus or a prospectus supplement, could materially and adversely affect our business, results of operations and financial condition, which in turn could materially and adversely affect the value of any securities offered by this prospectus and any accompanying prospectus supplement. As a result, you could lose all or part of your investment.

See also the information contained under the heading "Special Note Regarding Forward-Looking Statements" immediately below.

SPECIAL NOTE REGARDING FORWARD LOOKING STATEMENTS

Any statements in this prospectus, any accompanying prospectus supplement and the information incorporated herein and therein by reference relating to future financial or business performance, conditions or strategies and other financial and business matters, including expectations regarding future revenues and operating expenses, are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements that are not descriptions of historical facts are forward-looking statements and are based on management's estimates, assumptions, and projections that are subject to risks and uncertainties. These statements can generally be identified by the use of forward-looking words such as "believe," "expect," "intend," "may," "will," "should," "anticipate," "estimate" or similar terminology. Although we believe that the expectations reflected in our forward-looking statements are reasonable as of the date we make them, actual results could differ materially from those currently anticipated due to a number of factors, including risks relating to:

- our lack of profitability and the need for additional capital to operate our business;
- our understandings and beliefs regarding the role of certain biological mechanisms and processes in cancer;
- our drug candidates being in early stages of development, including in pre-clinical development;
- our inability to initially develop drug candidates for orphan indications to reduce the time-to-market and take advantage of certain incentives provided by the FDA;
- our inability to transition from our initial focus on developing drug candidates for orphan indications to candidates for more highly prevalent indications;
- our inability to successfully and timely complete clinical trials for our drug candidates in clinical development;
- uncertainties related to the timing, results and analyses related to our drug candidates in pre-clinical development;
- our inability to obtain the necessary U.S. and international regulatory approvals for our drug candidates;
- our reliance on third-party contract research organizations and other investigators and collaborators for certain research and development services;
- our ability to maintain or engage third-party manufacturers to manufacture, supply, store and distribute supplies of our drug candidates for our clinical trials;
- our ability to form strategic alliances and partnerships with pharmaceutical companies and other partners for sales and marketing of certain of our product candidates;
- demand for and market acceptance of our drug candidates; and
- the scope and validity of our intellectual property protection for our drug candidates and our ability to develop our candidates without infringing the intellectual property rights of others.

Further information on the factors and risks that could affect our business, financial condition and results of operations, are set forth in this prospectus under "Risk Factors" and in our filings with the SEC, which are available at *http://www.sec.gov*. Any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Except as required by law, we undertake no obligation to publicly revise our forward-looking statements to reflect events or circumstances that arise after the date of this prospectus or the date of documents incorporated by reference in this prospectus.

USE OF PROCEEDS

Except as described in any applicable prospectus supplement in connection with a specific offering, we intend to use the net proceeds from the sale of the securities offered under this prospectus for development of current and future product candidates, clinical trials, operating costs, working capital and general corporate purposes.

PLAN OF DISTRIBUTION

We may sell the securities being offered by this prospectus separately or together:

- directly to purchasers;
- through agents;
- to or through underwriters;
- through dealers;
- through a block trade in which the broker or dealer engaged to handle the block trade will attempt to sell the securities as agent, but may position and resell a portion of the block as principal to facilitate the transaction; or
- through a combination of any of these methods of sale.

In addition, we may issue the securities being offered by this prospectus as a dividend or distribution.

We may effect the distribution of 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 times of sale;
- at prices related to prevailing market prices; or
- at negotiated prices.

For example, we may engage in at-the-market offerings into an existing trading market in accordance with Rule 415(a)(4) under the Securities Act of 1933, as amended (the "Securities Act"). We may also sell securities through a rights offering, forward contracts or similar arrangements. 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.

The securities issued and sold under this prospectus will have no established trading market, other than our common stock, which is listed on the NYSE MKT. Any shares of our common stock sold pursuant to this prospectus will be eligible for listing and trading on the NYSE MKT, subject to official notice of issuance. Any underwriters to whom securities are sold by us for public offering and sale may make a market in the securities, but the underwriters will not be obligated to do so and may discontinue any market making at any time without notice. The securities, other than our common stock, may or may not be listed on a national securities exchange or other trading market.

We will describe the method of distribution of the securities in a prospectus supplement. We may directly solicit offers to purchase the securities offered by this prospectus. Agents designated by us from time to time may solicit offers to purchase the securities. We will name any agent involved in the offer of sale of the securities and set forth any commissions payable by us to an agent in a prospectus supplement. Unless otherwise indicated in a prospectus supplement, any agent will be acting on a best efforts basis for the period of its appointment. Any agent may be deemed to be an "underwriter" of the securities as that term is defined in the Securities Act.

We may directly solicit offers to purchase the securities, and we may sell directly to institutional investors or others. These persons may be deemed to be underwriters within the meaning of the Securities Act with respect to any resale of the securities. A prospectus supplement will describe the terms of any direct sales, including the terms of any bidding or auction process.

If a dealer is used in the sale of the securities, we or an underwriter will sell securities to the dealer, as principal. The dealer may resell the securities to the public at varying prices to be determined by the dealer at the time of resale. A prospectus supplement will set forth the name of the dealer and the terms of the transactions.

If we use an underwriter or underwriters in the sale of securities, we will execute an underwriting agreement with the underwriter or underwriters at the time we reach an agreement for sale. We will set forth in a prospectus supplement the names of the specific managing underwriter or underwriters, as well as any other underwriters, and the terms of the transactions, including compensation of the underwriters and dealers. This compensation may be in the form of discounts, concessions or commissions. Underwriters and others participating in any offering of the securities may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. We will describe any of these activities in a prospectus supplement.

Agreements we enter into with agents, underwriters and dealers may entitle them to indemnification by us against specified liabilities, including liabilities under the Securities Act, or to contribution by us to payments they may be required to make in respect of these liabilities. A prospectus supplement will describe the terms and conditions of indemnification or contribution.

We may authorize underwriters, dealers and agents to solicit offers by certain institutional investors to purchase offered securities under contracts providing for payment and delivery on a future date specified in a prospectus supplement. The prospectus supplement will also describe the public offering price for the securities and the commission payable for solicitation of these delayed delivery contracts. Delayed delivery contracts will contain definite fixed price and quantity terms. The obligations of a purchase under these delayed delivery contracts will be subject to only two conditions:

- that the institution’s purchase of the securities at the time of delivery of the securities is not prohibited under the law of any jurisdiction to which the institution is subject; and

- that we shall have sold to the underwriters the total principal amount of the offered securities, less the principal amount covered by the delayed contracts.

To the extent permitted by and in accordance with Regulation M under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), in connection with an offering an underwriter may engage in over-allotments, stabilizing transactions, short covering transactions and penalty bids. Over-allotments involve sales in excess of the offering size, which creates 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 be otherwise. If commenced, the underwriters may discontinue any of the activities at any time.

To the extent permitted by and in accordance with Regulation M under the Exchange Act, any underwriters who are qualified market makers on the NYSE MKT may engage in passive market making transactions in the securities on the NYSE MKT during the business day prior to the pricing of an offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker’s bid, however, the passive market maker’s bid must then be lowered when certain purchase limits are exceeded.

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

In compliance with the guidelines of the Financial Industry Regulatory Authority, Inc. ("FINRA"), the maximum consideration or discount to be received by any FINRA member or independent broker-dealer may not exceed 8% of the aggregate proceeds of the offering.

The underwriters, dealers and agents may engage in transactions with us, or perform services for us, in the ordinary course of business for which they receive compensation.

No securities may be sold under this prospectus without delivery, in paper format, in electronic format on the Internet, or both, of the applicable prospectus supplement describing the method and terms of the offering.

DESCRIPTION OF COMMON STOCK

The following description of our common stock, together with the additional information we include in any applicable prospectus supplement, summarizes the material terms and provisions of the common stock that we may offer under this prospectus. For the complete terms of our common stock, please refer to our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws that are filed as exhibits to our reports incorporated by reference into the registration statement that includes this prospectus. The Delaware General Corporation Law (the "DGCL") may also affect the terms of our common stock.

Authorized and Outstanding Common Stock

Our Amended and Restated Certificate of Incorporation provides that we have authority to issue 500,000,000 shares of our common stock, par value $0.0001 per share. As of June 16, 2014, there were 178,133,318 shares of common stock issued and outstanding, and there were outstanding warrants to purchase approximately an additional 15,984,204 shares of our common stock and options to purchase 10,306,601 shares of our common stock.

Listing

Our common stock is listed on the NYSE MKT under the symbol "RNN."

Dividends

Our Board of Directors may authorize, and we may make, distributions to our common stockholders, subject to any restriction in our Amended and Restated Certificate of Incorporation and to those limitations prescribed by law. However, we have never paid cash dividends on our common stock or any other securities. We anticipate that we will retain all of our future earnings, if any, for use in the expansion and operation of our business and do not anticipate paying cash dividends in the foreseeable future.

Fully Paid and Non-Assessable

All shares of our outstanding common stock are fully paid and non-assessable.

Voting Rights

Each share of our common stock is entitled to one vote in each matter submitted to a vote at a meeting of stockholders including in all elections for directors; stockholders are not entitled to cumulative voting in the election for directors. Our stockholders may vote either in person or by proxy.

Preemptive and Other Rights

Holders of our common stock have no preemptive rights and have no other rights to subscribe for additional securities of the Company under Delaware law. Nor does the common stock have any conversion rights or rights of redemption (or, if any such rights have been granted in relation to the common stock, any such rights have been waived). Upon liquidation, all holders of our common stock are entitled to participate pro rata in our assets available for distribution, subject to the rights of any class of preferred stock then outstanding.

Stockholder Action by Written Consent; Meetings

Pursuant to our Amended and Restated Certificate of Incorporation, stockholders holding at least a majority of our voting stock may take action by written consent in lieu of voting at a meeting.

Our Amended and Restated Bylaws provide that we must hold an annual meeting of stockholders. Special meetings of our stockholders may be called at any time only by the Board of Directors or by the Chairman of the Board.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Olde Monmouth Stock Transfer Company Incorporated.

Limitations of Director Liability

Delaware law authorizes corporations to limit or eliminate the personal liability of directors to corporations and their stockholders for monetary damages for breach of directors' fiduciary duty of care. Although Delaware law does not change directors' duty of care, it enables corporations to limit available relief to equitable remedies such as injunction or rescission. Our Amended and Restated Certificate of Incorporation limits the liability of our directors to us and our stockholders to the full extent permitted by Delaware law. Specifically, directors are not personally liable for monetary damages to us or our stockholders for breach of the director's fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions; and
- any transaction from which the director derived an improper personal benefit.

Indemnification

To the maximum extent permitted by law, our Amended and Restated Bylaws provide for mandatory indemnification of directors and officers against any expense, liability or loss to which they may become subject, or which they may incur as a result of being or having been a director or officer. In addition, we must advance or reimburse directors and officers for expenses they incur in connection with indemnifiable claims. We also maintain directors' and officers' liability insurance.

DESCRIPTION OF PREFERRED STOCK

The following description of our preferred stock, together with the additional information we include in any applicable prospectus supplement, summarizes the material terms and provisions of the preferred stock that we may offer under this prospectus. For the complete terms of our preferred stock, please refer to our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws that are filed as exhibits to our reports incorporated by reference into the registration statement that includes this prospectus. The DGCL may also affect the terms of our preferred stock.

Preferred Stock That We May Offer and Sell to You

Our Amended and Restated Certificate of Incorporation authorizes our Board of Directors, without further stockholder action, to provide for the issuance of up to 100,000,000 shares of preferred stock, in one or more classes or series and to fix the rights, preferences, privileges and restrictions thereof, including dividend rights, dividend rates, conversion rights, voting rights, terms of redemption, redemption prices, liquidation preferences and the number of shares constituting any series of the designation of such series, without further vote or action by the stockholders. We may amend from time to time our Amended and Restated Certificate of Incorporation to increase the number of authorized shares of preferred stock. Any such amendment would require the approval of the holders of a majority of the voting power of all of the shares of capital stock entitled to vote for directors, without a vote of the holders of preferred stock or any series thereof unless any such holder is entitled to vote for directors or a vote of any such holder is otherwise required pursuant to the Amended and Restated Certificate of Incorporation or certificates of designations establishing a series of preferred stock. As of the date of this prospectus, no shares of preferred stock are outstanding.

The particular terms of any series of preferred stock being offered by us under this shelf registration statement will be described in the prospectus supplement relating to that series of preferred stock.

Those terms may include:

- the title and liquidation preference per share of the preferred stock and the number of shares offered;
- the purchase price of the preferred stock;
- the dividend rate (or method of calculation), the dates on which dividends will be paid and the date from which dividends will begin to accumulate;
- any redemption or sinking fund provisions of the preferred stock;
- any conversion provisions of the preferred stock;
- the voting rights, if any, of the preferred stock; and
- any additional dividend, liquidation, redemption, sinking fund and other rights, preferences, privileges, limitations and restrictions of the preferred stock.

The preferred stock will, when issued, be fully paid and non-assessable.

The description of preferred stock above and the description of the terms of a particular series of preferred stock in any prospectus supplement are not complete. You should refer to the applicable certificate of designations for complete information. The prospectus supplement will also contain a description of U.S. federal income tax consequences relating to the preferred stock, if material.

Voting Rights

The DGCL provides that the holders of preferred stock will have the right to vote separately as a class on any proposal involving fundamental changes in the rights of holders of that preferred stock. This right is in addition to any voting rights that may be provided for in the applicable certificate of designations.

Other

Our issuance of preferred stock may have the effect of delaying or preventing a change in control. Our issuance of preferred stock could decrease the amount of earnings and assets available for distribution to the holders of common stock or other preferred stock or could adversely affect the rights and powers, including voting rights, of the holders of common stock or other preferred stock. The issuance of preferred stock could have the effect of decreasing the market price of our common stock.

Transfer Agent and Registrar

The transfer agent and registrar for the preferred stock will be set forth in the applicable prospectus supplement.

DESCRIPTION OF WARRANTS

The following description of our warrants, together with the additional information we may include in any applicable prospectus supplement, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. As of June 16, 2014, we had outstanding warrants to purchase 15,984,204 shares of common stock, having exercise prices ranging from $0.41 to $1.90 and expiration dates from June 30, 2014 to January 21, 2019. Those warrants are not related to the registration statement of which this prospectus forms a part and the shares issued to the warrant holders upon exercise will not be issued pursuant to this prospectus or the registration statement.

We may issue warrants for the purchase of shares of our common stock or preferred stock. Warrants may be issued independently or together with the shares of common stock or preferred stock offered by any prospectus supplement to this prospectus and may be attached to or separate from such shares. Further terms of the warrants will be set forth in the applicable prospectus supplement.

The applicable prospectus supplement will describe the terms of the warrants in respect of which this prospectus is being delivered, including, where applicable, the following:

- the title of such warrants;
- the aggregate number of such warrants;
- the price or prices at which such warrants will be issued;
- the designation, terms and number of shares of common stock or preferred stock purchasable upon exercise of such warrants;
- the designation and terms of the shares of common stock or preferred stock with which such warrants are issued and the number of such warrants issued with such shares;
- the date on and after which such warrants and the related common stock or preferred stock will be separately transferable, including any limitations on ownership and transfer of such warrants;
- the price at which each share of common stock or preferred stock purchasable upon exercise of such warrants may be purchased;
- the date on which the right to exercise such warrants shall commence and the date on which such right shall expire;
- the minimum or maximum amount of such warrants that may be exercised at any one time;
- information with respect to book-entry procedures, if any;
- a discussion of certain federal income tax consequences; and
- any other terms of such warrants, including terms, procedures and limitations relating to the exchange and exercise of such warrants.

This summary of the warrants is not complete. We urge you to read the warrants filed as exhibits to the registration statement that includes this prospectus and the description of the additional terms of the warrants included in the prospectus supplement.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder thereof to purchase for cash the number of shares of common stock and the number of shares of preferred stock at the exercise price as shall in each case be set forth in, or be determinable as set forth in, the applicable prospectus supplement. Warrants may be exercised at any time up to the close of business on the expiration date set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Warrants may be exercised as set forth in the applicable prospectus supplement relating to the warrants offered thereby. Upon receipt of payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent, if any, or any other office indicated in the applicable prospectus supplement, we will, as soon as practicable, forward the purchased securities. If less than all of the warrants represented by the warrant certificate are exercised, a new warrant certificate will be issued for the remaining warrants. Holders of warrants will be required to pay any tax or governmental charge that may be imposed in connection with transferring the underlying securities in connection with the exercise of the warrants.

DESCRIPTION OF UNITS

The following description, together with the additional information we may include in any applicable prospectus supplement, summarizes the material terms and provisions of the units that we may offer under this prospectus and the related unit agreements. While the terms summarized below will apply generally to any units we may offer, we will describe the particular terms of any series of units in more detail in the applicable prospectus supplement.

We may, from time to time, issue units comprised of one or more of the other securities that may be offered under this prospectus, in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately at any time or at any time before a specified date.

The applicable prospectus supplement will describe the following terms of the units in respect of which this prospectus is being delivered:

- the material terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any material provisions relating to the issuance, payment, settlement, transfer or exchange of the units or the securities comprising the units;
- whether the units will be issued fully registered or in global form; and
- any material provisions of the governing unit agreement that differ from those described above.

The description in the applicable prospectus supplement and other offering material of any units we offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable unit agreement, which will be filed with the SEC if we offer units. For more information on how you can obtain copies of the applicable unit agreement if we offer units, see “Where You Can Find More Information.” We urge you to read the applicable unit agreement and the applicable prospectus supplement and any other offering material in their entirety.

RATIO OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

The table below presents the ratio of earnings to combined fixed charges and preferred stock dividends and the coverage deficiency for the last five fiscal years and the three months ended March 31, 2014.

	For the Three Months Ended March 31, 2014	For the Year Ended December 31,				
		2013	2012	2011	2010	2009
Ratio of earnings to combined fixed charges and preferred stock dividends	Deficiency	Deficiency	Deficiency	Deficiency	Deficiency	Deficiency
Deficiency (in thousands)	$ (14,600)	$ (9,499)	$ (6,227)	$ (11,345)	$ (14,022)	$ (2,903)

For the three months ended March 31, 2014 and the years ended December 31, 2013, 2012, 2011, 2010 and 2009, earnings are inadequate to cover fixed charges and the dollar amount of the coverage deficiency is disclosed in the above table, in thousands.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information that we file with the SEC, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of the prospectus. These documents may include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as Proxy Statements. Any documents that we subsequently file with the SEC will automatically update and replace the information previously filed with the SEC. Thus, for example, in the case of a conflict or inconsistency between information set forth in this prospectus and information incorporated by reference into this prospectus, you should rely on the information contained in the document that was filed later.

This prospectus incorporates by reference the documents listed below that we previously have filed with the SEC and any additional documents that we may file with the SEC (File No. 001-34079) under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this prospectus and the termination of the offering of the securities. These documents contain important information about us.

- Our Annual Report on Form 10-K for the year ended December 31, 2013 filed with the SEC on March 21, 2014, together with those portions of our Definitive Proxy Statement on Schedule 14A filed with the SEC on April 18, 2014 and incorporated by reference into our Annual Report on Form 10-K;
- Our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2014 filed with the SEC on May 14, 2014;
- Our Current Reports on Form 8-K (other than portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits accompanying such reports that are related to such items) filed with the SEC on January 15, 2014, January 21, 2014, March 3, 2014, and June 9, 2014;
- The description of our common stock contained in our Registration Statement on Form 8-A filed under the Exchange Act on May 23, 2008, including any amendment or report filed for the purpose of updating such description; and
- All documents filed by us pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus and before the termination of the offering of the securities.

We are not, however, incorporating by reference any documents, or portions of documents, whether specifically listed above or arising in the future, which are not deemed “filed” with the SEC.

You can obtain a copy of any or all of the documents incorporated by reference in this prospectus (other than an exhibit to a document unless that exhibit is specifically incorporated by reference into that document) from the SEC on its website at *http://www.sec.gov.* You also can obtain these documents from us without charge by visiting our Internet website *http://www.rexahn.com* or by requesting them in writing, by email or by telephone at the following address:

Tae Heum (Ted) Jeong
Senior Vice President & Chief Financial Officer
Rexahn Pharmaceuticals, Inc.
15245 Shady Grove Road, Suite 455
Rockville, Maryland 20850
(240) 268-5300

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement under the Securities Act that registers the distribution of the securities offered under this prospectus. The registration statement, including the attached exhibits and schedules and the information incorporated by reference, contains additional relevant information about the securities and us. The rules and regulations of the SEC allow us to omit from this prospectus certain information included in the registration statement. In addition, we file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy this information and the registration statement at the SEC public reference room located at 100 F Street, N.E., Washington D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the public reference room.

In addition, the SEC maintains an Internet website that contains reports, proxy statements and other information about issuers of securities, like us, who file such material electronically with the SEC. The address of that website is *http://www.sec.gov.* We also maintain a website at *http://www.rexahn.com*, which provides additional information about us. The contents of our website, however, are not a part of this prospectus.

LEGAL MATTERS

Hogan Lovells US LLP, Baltimore, Maryland, has passed upon certain legal matters in connection with the securities offered hereby.

EXPERTS

The financial statements as of and for the years ended December 31, 2013 and 2012, and the cumulative period from March 19, 2001 (inception) to December 31, 2013, incorporated in this prospectus by reference from the Company's Annual Report on Form 10-K for the year ended December 31, 2013, were audited by ParenteBeard LLC, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

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24,000,000 SHARES OF COMMON STOCK
WARRANTS TO PURCHASE 18,000,000 SHARES OF COMMON STOCK

PROSPECTUS SUPPLEMENT

Rodman & Renshaw
a unit of H.C. Wainwright & Co.

September 14, 2016