

NEUROCRINE BIOSCIENCES INC

Form 424B5

February 17, 2015

Table of Contents

The information contained in this preliminary prospectus supplement and the accompanying prospectus is not complete and may be changed. A registration statement relating to these securities has become effective by rule of the Securities and Exchange Commission. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities, and we are not soliciting offers to buy these securities, in any state or other jurisdiction where the offer or sale is not permitted.

**Filed Pursuant to Rule 424(b)(5)
Registration No. 333-194123**

SUBJECT TO COMPLETION, DATED FEBRUARY 17, 2015

PROSPECTUS SUPPLEMENT

(to Prospectus dated February 25, 2014)

\$225,000,000

Common Stock

We are offering \$225,000,000 of our common stock. Our common stock is quoted on The NASDAQ Global Select Market under the symbol NBIX. On February 13, 2015, the last reported sale price of our common stock on The NASDAQ Global Select Market was \$37.22 per share.

Investing in our common stock involves a high degree of risk. Please read Risk Factors beginning on page S-4 of this prospectus supplement and in the documents incorporated by reference into this prospectus supplement.

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

	PER SHARE	TOTAL
Public offering price	\$	\$
Underwriting discounts and commissions(1)		
Proceeds to Neurocrine before expenses		

(1) We have agreed to reimburse the underwriters for certain expenses. See Underwriting. Delivery of the shares of common stock is expected to be made on or about February , 2015. We have granted the underwriters an option for a period of 30 days to purchase up to an additional \$33,750,000 of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be \$, and the total proceeds to us, before expenses, will be \$.

Joint Book-Running Managers

J.P. Morgan

Prospectus Supplement dated February , 2015

Deutsche Bank Securities

Table of Contents**Table of Contents****Prospectus Supplement**

	Page
<u>About this Prospectus Supplement</u>	S-ii
<u>Prospectus Supplement Summary</u>	S-1
<u>Risk Factors</u>	S-4
<u>Forward-Looking Statements</u>	S-6
<u>Use of Proceeds</u>	S-8
<u>Dilution</u>	S-9
<u>Material U.S. Federal Income Tax Consequences to Non-U.S. Holders</u>	S-10
<u>Underwriting</u>	S-14
<u>Legal Matters</u>	S-21
<u>Experts</u>	S-21
<u>Where You Can Find More Information</u>	S-21
<u>Incorporation of Certain Information by Reference</u>	S-21
Prospectus	

	Page
<u>About this Prospectus</u>	i
<u>Prospectus Summary</u>	1
<u>Risk Factors</u>	1
<u>Forward Looking Statements</u>	1
<u>Use of Proceeds</u>	2
<u>Description of Capital Stock</u>	2
<u>Plan of Distribution</u>	4
<u>Legal Matters</u>	5
<u>Experts</u>	5
<u>Where You Can Find More Information</u>	6
<u>Incorporation by Reference</u>	7

You should rely only on the information contained in or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectus that we have authorized for use in connection with this offering. We have not, and the underwriters have not, authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the 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, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this

prospectus supplement and the accompanying prospectus, and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus supplement entitled *Where You Can Find More Information* and *Incorporation of Certain Information by Reference*.

S-i

Table of Contents

About this Prospectus Supplement

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering of common stock 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 dated February 25, 2014, including the documents incorporated by reference therein, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. 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 in any document incorporated by reference that was filed with the Securities and Exchange Commission, or SEC, before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement. You should assume that the information contained in this prospectus supplement is accurate as of the date on the front cover of this prospectus supplement only and that any information we have incorporated by reference or included in the accompanying prospectus is accurate only as of the date given in the document incorporated by reference or as of the date of the prospectus, as applicable, regardless of the time of delivery of this prospectus supplement or the accompanying prospectus or any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

All references in this prospectus supplement and the accompanying prospectus to Neurocrine, the Company, we, us, our, or similar references refer to Neurocrine Biosciences, Inc. and its subsidiaries on a consolidated basis, except where the context otherwise requires or as otherwise indicated.

This prospectus supplement, the accompanying prospectus, and the information incorporated herein and therein by reference includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus supplement or the accompanying prospectus are the property of their respective owners.

Table of Contents**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. 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 our company 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 and in the documents incorporated by reference to this prospectus supplement.*

Company Overview

We discover and develop innovative and life-changing pharmaceuticals, in diseases with high unmet medical needs, through our novel R&D platform, with a focus on neurological and endocrine based diseases and disorders. Our two lead late-stage clinical programs are elagolix, a gonadotropin-releasing hormone (GnRH) antagonist for women's health that is partnered with AbbVie Inc. (AbbVie), and a wholly owned vesicular monoamine transporter 2 (VMAT2) inhibitor for the treatment of movement disorders. We intend to maintain certain commercial rights to our VMAT2 inhibitor and evolve into a fully-integrated pharmaceutical company.

Our Product Pipeline

The following table summarizes our most advanced product candidates currently in clinical development and those currently in research:

Program	Target Indication(s)	Status	Rights
<i>Product candidates in clinical development:</i>			
Elagolix	Endometriosis	Phase III	AbbVie
VMAT2 (NBI-98854)	Tardive Dyskinesia	Phase III	Neurocrine
Elagolix	Uterine Fibroids	Phase II	AbbVie
CRF ₁ Antagonist (NBI-77860)	Classical Congenital Adrenal Hyperplasia	Phase I/II	Neurocrine
VMAT2 (NBI-98854)	Tourette Syndrome	Phase I	Neurocrine
<i>Research programs:</i>			
VMAT2	Movement Disorders, Bipolar Disorder and Schizophrenia	Research	Neurocrine
GnRH Antagonists	Men's and Women's Health, Oncology	Research	AbbVie

Antiepileptic Drugs	Epilepsy, Essential Tremor, Pain	Research	Neurocrine
G Protein-Coupled Receptors	Other Conditions	Research	Neurocrine

Phase III indicates that we or our collaborators are conducting large-scale, multicenter comparative clinical trials on patients afflicted with a target disease in order to provide substantial evidence for efficacy and safety.

Phase II indicates that we or our collaborators are conducting clinical trials on groups of patients afflicted with a specific disease in order to determine preliminary efficacy, optimal dosages and expanded evidence of safety.

S-1

Table of Contents

Phase I indicates that we are conducting clinical trials with a smaller number of subjects to determine early safety profile, maximally tolerated dose and pharmacological properties of the product in human volunteers.

Research indicates identification and evaluation of compound(s) in laboratory and preclinical models.

Corporate Information

We were originally incorporated in California in January 1992 and were reincorporated in Delaware in May 1996. Our principal executive offices are located at 12780 El Camino Real, San Diego, California 92130. Our telephone number is (858) 617-7600. Our website is www.neurocrine.com. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus supplement or the accompanying prospectus and should not be considered part of this prospectus supplement or the accompanying prospectus.

S-2

S-3

Table of Contents

Risk Factors

*An investment in our common stock involves a high degree of risk. Before deciding whether to invest in our common stock, you should consider carefully the risks described below and discussed under the section captioned **Risk Factors** contained in our Annual Report on Form 10-K for the year ended December 31, 2014, which is incorporated by reference in this prospectus supplement and the accompanying prospectus in its entirety, together with other information in this prospectus supplement, the accompanying prospectus, the information and documents incorporated herein and therein by reference, and in any free writing prospectus that we have authorized for use in connection with this offering. If any of these risks actually 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.*

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 in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. Our failure to apply these funds effectively could have a material adverse effect on our business, delay the development of our product candidates, including our VMAT2 inhibitor, and cause the price of our common stock to decline.

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

Since the price per share of our common stock being offered is substantially higher than the net tangible book value per share of our common stock, you will suffer immediate and substantial dilution in the net tangible book value of the common stock you purchase in this offering. Based on an assumed public offering price of \$37.22 per share (the last reported sale price of our common stock on The NASDAQ Global Select Market on February 13, 2015), if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of \$32.13 per share with respect to the net tangible book value of the common stock. See the section entitled **Dilution** below for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

You may experience future dilution as a result of future equity offerings and other issuances of our common stock or other securities. In addition, this offering and future equity offerings and other issuances of our common stock or other securities may adversely affect our common stock price.

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock or securities convertible into common stock in future transactions may be higher or lower than the price per share in this offering.

As of December 31, 2014, 5,750,324 shares of common stock were reserved for issuance upon the exercise of options outstanding, 1,144,475 shares of common stock were reserved for the vesting of restricted stock units outstanding and 2,650,741 shares of common stock were reserved for future issuance under our stock incentive programs. You will

incur dilution upon exercise of any outstanding stock options, upon vesting of any outstanding restricted stock units or upon the issuance of shares of common stock under our stock incentive programs.

S-4

Table of Contents

In addition, the sale of shares in this offering and any future sales of a substantial number of shares of our common stock in the public market, or the perception that such sales may occur, could adversely affect the price of our common stock. We cannot predict the effect, if any, that market sales of those shares of common stock or the availability of those shares of common stock for sale will have on the market price of our common stock.

Our ability to use our net operating tax loss carryforwards and certain other tax attributes may be limited.

Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an ownership change, generally defined as a greater than 50% change (by value) in its equity ownership over a three year period, the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes, such as research tax credits, to offset its post-change income may be limited. We have determined that no ownership changes have occurred through December 31, 2014. However, subsequent changes in our stock ownership, including those that result from this or future offerings, could result in an ownership change. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards and other pre-change tax attributes to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us.

Table of Contents

Forward-Looking Statements

This prospectus supplement, the accompanying prospectus, the documents we have filed with the SEC that are incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. These statements relate to future events or to our future operating or financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to, statements about:

- ; the progress, timing and results of clinical trials involving our drug candidates;

- ; the progress of our research and development programs;

- ; the benefits to be derived from our drug candidates;

- ; our plans or others' plans to conduct future clinical trials or research and development efforts;

- ; our plans and expectations regarding partnering our drug candidates;

- ; our plans to maintain certain commercial rights to our drug candidates and evolve into a fully-integrated pharmaceutical company;

- ; the benefits to be derived from relationships with our collaborators;

- ; the receipt of regulatory clearances and approvals;

- ; estimates of the potential markets for our drug candidates;

- ; the use of proceeds from this offering; and

- ; our estimates regarding our capital requirements and our need for additional financing.

In some cases, you can identify forward-looking statements by terms such as may, will, should, could, would, plans, anticipates, believes, estimates, projects, predicts, potential and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on

assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the heading Risk Factors beginning on page S-4 of this prospectus supplement and in our SEC filings. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement.

You should read this prospectus supplement, the accompanying prospectus, the documents we have filed with the SEC that are incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

You should rely only on the information 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. We and the underwriters for this offering have not authorized anyone to provide you with different information. The common stock offered under this prospectus is not being offered in any state or other jurisdiction where the offer is not permitted. You should not assume that the information contained in this prospectus supplement or the accompanying prospectus is accurate as of any date other than the date on the front of this prospectus supplement or the accompanying prospectus, as applicable, or that any information

Table of Contents

incorporated by reference in this prospectus supplement or the accompanying prospectus is accurate as of any date other than the date of the document so incorporated by reference. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements.

S-7

Table of Contents

Use of Proceeds

We estimate that the net proceeds from the sale of the _____ shares of common stock that we are offering will be approximately \$211.6 million, or approximately \$243.4 million if the underwriters exercise in full their option to purchase _____ additional shares of common stock, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering to fund our research and development efforts, including clinical trial costs for our product candidates, to prepare for commercialization efforts for our lead product candidates, and for general corporate purposes, including working capital. We may also use a portion of the net proceeds from this offering to acquire or invest in complementary businesses, technologies, product candidates or other intellectual property, although we have no present commitments or agreements to do so.

The amounts and timing of these expenditures will depend on a number of factors, such as the timing and progress of our research and 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 application of these proceeds. Pending application of the net proceeds as described above, we intend to temporarily invest the proceeds in short and long-term interest bearing instruments.

Table of Contents**Dilution**

Our net tangible book value as of December 31, 2014 was approximately \$208.7 million, or \$2.73 per share. Net tangible book value per share is determined by dividing our total tangible assets, less total liabilities, by the number of shares of our common stock outstanding as of December 31, 2014. Dilution in net tangible book value per share represents the difference between (i) the amount per share paid by purchasers of shares of common stock in this public offering and (ii) the net tangible book value per share of our common stock immediately after this public offering.

After giving effect to the assumed sale of 6,045,137 shares of our common stock in this offering at the assumed public offering price of \$37.22 per share (the last reported sale price of our common stock on The NASDAQ Global Select Market on February 13, 2015), and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of December 31, 2014 would have been approximately \$420.3 million, or \$5.09 per share. This represents an immediate increase in net tangible book value of \$2.36 per share to existing stockholders and immediate dilution in net tangible book value of \$32.13 per share to investors purchasing our common stock in this offering at the public offering price. The following table illustrates this dilution on a per share basis:

Assumed public offering price per share	\$ 37.22
Net tangible book value per share as of December 31, 2014	\$ 2.73
Increase per share attributable to investors purchasing our common stock in this offering	\$ 2.36
As adjusted net tangible book value per share as of December 31, 2014 after giving effect to this offering	\$5.09
Dilution per share to new investors purchasing our common stock in this offering	\$ 32.13

A \$1.00 increase (decrease) in the assumed public offering price per share of our common stock would increase (decrease) our net tangible book value after giving effect to this offering by approximately \$5.7 million, the net tangible book value after giving effect to this offering by \$0.07 per share and the dilution to new investors after giving effect in this offering by \$0.93 per share, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

If the underwriters exercise in full their option to purchase an additional 906,770 of our shares of common stock at the assumed public offering price of \$37.22 per share (the last reported sale price of our common stock on the NASDAQ Global Select Market on February 13, 2015), the as adjusted net tangible book value after this offering would be \$5.42 per share, representing an increase in net tangible book value of \$2.69 per share to existing stockholders and immediate dilution in net tangible book value of \$31.80 per share to investors purchasing our common stock in this offering.

The number of shares of our common stock to be outstanding immediately after this offering is based on 76,465,942 shares outstanding as of December 31, 2014, and excludes:

i 5,750,324 shares of common stock reserved for issuance upon the exercise of options outstanding as of December 31, 2014, at a weighted average exercise price of \$9.31 per share;

• 1,144,475 shares of common stock reserved for the vesting of restricted stock units outstanding as of December 31, 2014; and

• 2,650,741 shares of common stock reserved for future issuance under our stock incentive programs as of December 31, 2014.

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

S-9

Table of Contents

**Material U.S. Federal Income Tax Consequences
to Non-U.S. Holders**

The following summary describes the material U.S. federal income tax consequences of the acquisition, ownership and disposition of common stock acquired in this offering by Non-U.S. Holders (as defined below). This discussion does not address all aspects of U.S. federal income taxes, does not discuss the potential application of the Medicare Contribution tax, and does not deal with state, local and non-U.S. tax consequences that may be relevant to Non-U.S. Holders in light of their particular circumstances, nor does it address U.S. federal tax consequences other than income taxes. Rules different from those described below may apply to certain Non-U.S. Holders that are subject to special treatment under the Internal Revenue Code of 1986, as amended, or the Code, such as financial institutions, insurance companies, tax-exempt organizations, broker-dealers and traders in securities, U.S. expatriates, controlled foreign corporations, passive foreign investment companies, corporations that accumulate earnings to avoid U.S. federal income tax, persons that hold our common stock as part of a straddle, conversion transaction, or other risk reduction strategy, partnerships and other pass-through entities, and investors in such pass-through entities or entities that are treated as disregarded entities for U.S. federal income tax purposes (regardless of places of organization or formation). Such Non-U.S. Holders are urged to consult their own tax advisors to determine the U.S. federal, state, local and other tax consequences that may be relevant to them. Furthermore, the discussion below is based upon the provisions of the Code, and Treasury regulations, rulings and judicial decisions thereunder as of the date hereof, and such authorities may be repealed, revoked or modified, perhaps retroactively, so as to result in U.S. federal income tax consequences different from those discussed below. We have not requested any ruling from the U.S. Internal Revenue Service, or IRS, with respect to the statements made and the conclusions reached in the following summary. This discussion assumes that the Non-U.S. Holder holds our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment).

The following discussion is for general information only and is not tax advice for any Non-U.S. Holders under their particular circumstances. **Persons considering the purchase of common stock pursuant to this offering should consult their own tax advisors concerning the U.S. federal income tax consequences of acquiring, owning and disposing of our common stock in light of their particular situations as well as any consequences arising under the laws of any other taxing jurisdiction, including any state, local or non-U.S. tax consequences, any U.S. federal non-income tax consequences, and the possible application of tax treaties that might change the general provisions discussed below.**

For the purposes of this discussion, a Non-U.S. Holder is, for U.S. federal income tax purposes, a beneficial owner of common stock that is not a U.S. Holder. A U.S. Holder means a beneficial owner of common stock that is for U.S. federal income tax purposes (i) an individual who is a citizen or resident of the United States, (ii) a corporation or other entity treated as a corporation created or organized in or under the laws of the United States, any state thereof or the District of Columbia, (iii) an estate the income of which is subject to U.S. federal income taxation regardless of its source or (iv) a trust if it (x) is subject to the primary supervision of a court within the United States and one or more U.S. persons have the authority to control all substantial decisions of the trust or (y) has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person. Furthermore, partnerships or other entities that are treated as partnerships for U.S. federal income tax purposes (regardless of their places of organization or formation) and entities that are treated as disregarded entities for U.S. federal income tax purposes (regardless of their places of organization or formation) are not addressed by this discussion and are, therefore, not considered to be Non-U.S. Holders for the purposes of this discussion.

Distributions

Subject to the discussion below regarding backup withholding and foreign accounts, distributions, if any, made on our common stock to a Non-U.S. Holder of our common stock generally will constitute dividends for U.S. tax

S-10

Table of Contents

purposes to the extent made out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles). Dividends paid to a Non-U.S. Holder that are not effectively connected with such holder's conduct of a U.S. trade or business generally will be subject to withholding tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. To obtain a reduced rate of withholding under a treaty, a Non-U.S. Holder generally will be required to provide us or our paying agent with a properly-executed IRS Form W-8BEN, W-8BEN-E, or other appropriate form, certifying the Non-U.S. Holder's entitlement to benefits under that treaty. Such certificate must be provided prior to the payment of dividends and must be updated periodically. In the case of a Non-U.S. Holder that is an entity, Treasury regulations and the relevant tax treaty provide rules to determine whether, for purposes of determining the applicability of a tax treaty, dividends will be treated as paid to the entity or to those holding an interest in that entity. If a Non-U.S. Holder holds stock through a financial institution or other agent acting on the holder's behalf, the holder will be required to provide appropriate documentation to such agent. The holder's agent will then be required to provide certification to the applicable withholding agent, either directly or through other intermediaries. If you are eligible for a reduced rate of U.S. federal withholding tax under an income tax treaty, you should consult your own tax advisor to determine if you are able to obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for a refund with the IRS.

We generally are not required to withhold tax on dividends paid to a Non-U.S. Holder that are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, are attributable to a permanent establishment that the Non-U.S. Holder maintains in the United States) if a properly-executed IRS Form W-8ECI stating that the dividends are effectively connected with the Non-U.S. Holder's conduct of a United States trade or business is furnished to us or our paying agent (or, if stock is held through a financial institution or other agent, to such agent). In general, such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates, unless a specific treaty exemption applies. A corporate Non-U.S. Holder receiving effectively connected dividends may also be subject to an additional branch profits tax, which is imposed, under certain circumstances, at a rate of 30% (or such lower rate as may be specified by an applicable treaty) on the corporate Non-U.S. Holder's effectively connected earnings and profits, subject to certain adjustments.

To the extent distributions on our common stock, if any, exceed our current and accumulated earnings and profits, they will first reduce your basis in our common stock as a non-taxable return of capital, but not below zero, and then will be treated as gain and taxed in the same manner as capital gain realized from a sale or other disposition of common stock as described in the next section.

Gain on Disposition of Common Stock

Subject to the discussion below regarding backup withholding and foreign accounts, a Non-U.S. Holder generally will not be subject to U.S. federal income tax with respect to gain realized on a sale or other disposition of our common stock unless (i) the gain is effectively connected with a trade or business of such holder in the United States (and if required by an applicable income tax treaty, is attributable to a permanent establishment that such holder maintains in the United States), (ii) the Non-U.S. Holder is a nonresident alien individual and is present in the United States for 183 or more days in the taxable year of the disposition and certain other conditions are met, or (iii) our common stock constitutes a United States real property interest by reason of our status as a United States real property holding corporation (a USRPHC) within the meaning of Code Section 897(c)(2) at any time within the shorter of the five-year period preceding such disposition or such holder's holding period.

If you are a Non-U.S. Holder described in (i) above, you will be required to pay tax on the net gain derived from the sale at regular U.S. federal income tax rates, unless a specific treaty exemption applies, and corporate Non-U.S. Holders described in (i) above may be subject to an additional branch profits tax at a 30% rate or such lower rate as

may be specified by an applicable income tax treaty. If you are an individual Non-U.S. Holder described in (ii) above, you will be required to pay a flat 30% tax on the gain derived from the sale, which gain may be offset by U.S. source capital losses (even though you are not considered a resident of the United States). With

S-11

Table of Contents

respect to (iii) above, in general, we would be a USRPHC if interests in U.S. real property constituted (by fair market value) at least half of our assets. We believe that we are not, and do not anticipate becoming, a USRPHC, but there can be no assurance that we are not and will not become a USRPHC. Even if we are treated as a USRPHC, gain realized by a Non-U.S. Holder on a disposition of our common stock will not be subject to U.S. federal income tax so long as (1) the Non-U.S. Holder owned directly, indirectly, actually or constructively, no more than five percent of our common stock at all times within the shorter of (a) the five year period preceding the disposition or (b) the holder's holding period and (2) our common stock is regularly traded, as defined by applicable Treasury regulations, on an established securities market. There can be no assurance that our common stock will continue to qualify as regularly traded on an established securities market.

Information Reporting Requirements and Backup Withholding

Generally, we or certain financial middlemen must report information to the IRS with respect to any dividends we pay on our common stock including the amount of any such dividends, the name and address of the recipient, and the amount, if any, of tax withheld. A similar report is sent to the holder to whom any such dividends are paid. Pursuant to tax treaties or certain other agreements, the IRS may make its reports available to tax authorities in the recipient's country of residence.

Dividends paid by us (or our paying agents) to a Non-U.S. Holder may also be subject to U.S. backup withholding. U.S. backup withholding generally will not apply to a Non-U.S. Holder provided the applicable withholding agent does not have actual knowledge or reason to know the holder is a United States person, and the Non-U.S. Holder provides a properly-executed IRS Form W-8BEN, W-8BEN-E or W-8ECI or otherwise establishes an exemption.

Under current U.S. federal income tax law, U.S. information reporting and backup withholding generally will apply to the proceeds of a disposition of our common stock effected by or through a U.S. office of any broker, U.S. or non-U.S., unless the holder provides a properly-executed IRS Form W-8BEN, W-8BEN-E or W-8ECI, or otherwise establishes an exemption. Generally, U.S. backup withholding and information reporting will not apply to a payment of disposition proceeds to a Non-U.S. Holder where the transaction is effected outside the U.S. through a non-U.S. office of a non-U.S. broker. For information reporting purposes, certain non-U.S. brokers with substantial U.S. ownership or operations will generally be treated in a manner similar to U.S. brokers.

If backup withholding applies to you, you should consult with your own tax advisor to determine if you are able to obtain a tax benefit or credit with respect to such backup withholding.

Foreign Accounts

A U.S. federal withholding tax of 30% may apply to dividends and the gross proceeds of a disposition of our common stock paid to a foreign financial institution (as specifically defined by applicable rules), including when the foreign financial institution holds our common stock on behalf of a Non-U.S. Holder, unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which may include certain equity holders of such institution, as well as certain account holders that are foreign entities with U.S. owners). Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing these withholding and reporting requirements may be subject to different rules. This U.S. federal withholding tax of 30% will also apply to dividends and the gross proceeds of a disposition of our common stock paid to a non-financial foreign entity unless such entity provides the withholding agent with either a certification that it does not have any substantial direct or indirect U.S. owners or provides information regarding direct and indirect U.S. owners of the entity. The withholding tax described above will not apply if the foreign financial institution or

non-financial foreign entity otherwise qualifies for an exemption from the rules. Under certain circumstances, a Non-U.S. Holder might be eligible for refunds or credits of such taxes. Holders are encouraged to consult with their own tax advisors regarding the possible implications of this withholding on their investment in our common stock.

S-12

Table of Contents

The withholding provisions described above generally apply currently to payments of dividends and will apply to payments of gross proceeds from a sale or other disposition of common stock on or after January 1, 2017.

EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAW, AS WELL AS THE TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL, NON-U.S., OR U.S. NON-INCOME OR ESTATE TAX LAWS.

S-13

Table of Contents**Underwriting**

We are offering the shares of common stock described in this prospectus supplement through a number of underwriters. J.P. Morgan Securities LLC and Deutsche Bank Securities Inc. are acting as joint book-running managers of the offering and as the representatives of the underwriters. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus supplement, the number of shares of common stock listed next to its name in the following table:

Name	Number of shares
J.P. Morgan Securities LLC	
Deutsche Bank Securities Inc.	

Total

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

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

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

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

	Without option exercise	With option exercise
Per Share	\$	\$

Total

\$

\$

Pursuant to the terms of the underwriting agreement, we have agreed to reimburse the underwriters for certain expenses relating to certain aspects of this offering in an amount up to \$20,000. We estimate that the total

S-14

Table of Contents

expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately \$425,000.

A prospectus in electronic format may be made available on the websites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the underwriters to selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not, directly or indirectly: (i) sell, offer to sell, contract to sell or lend any shares of our common stock or options or warrants or other rights to acquire shares of our common stock or any securities exchangeable or convertible into shares of our common stock; (ii) effect any short sale, or establish or increase any put equivalent position (as defined in Rule 16a-1(h) under the Exchange Act) or liquidate or decrease any call equivalent position (as defined in Rule 16a-1(b) under the Exchange Act) of any shares of our common stock or options or warrants or other rights to acquire shares of our common stock or any securities exchangeable or convertible into shares of our common stock; (iii) pledge, hypothecate or grant any security interest in any shares of our common stock or options or warrants or other rights to acquire shares of our common stock or any securities exchangeable or convertible into shares of our common stock; (iv) in any other way transfer or dispose of any shares of our common stock or options or warrants or other rights to acquire shares of our common stock or any securities exchangeable or convertible into shares of our common stock; (v) enter into any swap, hedge or similar arrangement or agreement that transfers, in whole or in part, the economic risk of ownership of any shares of our common stock or options or warrants or other rights to acquire shares of our common stock or any securities exchangeable or convertible into shares of our common stock, regardless of whether any such transaction is to be settled in securities, in cash or otherwise; (vi) announce the offering of any shares of our common stock or options or warrants or other rights to acquire shares of our common stock or any securities exchangeable or convertible into shares of our common stock; (vii) file any registration statement under the Securities Act in respect of any shares of our common stock or options or warrants or other rights to acquire shares of our common stock or any securities exchangeable or convertible into shares of our common stock (other than as contemplated by this Agreement with respect to the Offered Shares); or (viii) publicly announce the intention to do any of the foregoing, in each case without the prior written consent of J.P. Morgan Securities LLC and Deutsche Bank Securities Inc. on behalf of the underwriters for a period of 90 days after the date of this prospectus supplement.

Notwithstanding the foregoing, if (1) during the last 17 days of the 90-day restricted period, we issue an earnings release or material news or a material event relating to our company occurs; or (2) prior to the expiration of the 90-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 90-day period, the restrictions described above shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event unless J.P. Morgan Securities LLC and Deutsche Bank Securities Inc. waive, in writing, such an extension. The foregoing sentence will not apply if (i) the shares of our common stock are actively traded securities (as defined in Regulation M), (ii) we meet the applicable requirements of paragraph (a)(1) of Rule 139 under the Securities Act in the manner contemplated by NASD Conduct Rule 2711(f)(4), and (iii) the provisions of NASD Conduct Rule 2711(f)(4) do not restrict the publishing or distribution of any research reports relating to us published or distributed by any of the underwriters during the 15 days before or after the last day of the 90-day period (before giving effect to such extension). We will provide J.P. Morgan Securities LLC and Deutsche Bank Securities Inc. with prior notice of any such announcement that gives rise to an extension of the 90-day period.

The restrictions described in the immediately preceding paragraph do not apply, subject to certain conditions, to the following:

the issuance of shares of our common stock pursuant to transactions relating to any director or employee stock option plan, stock ownership plan or dividend reinvestment plan of ours in effect on the date hereof and described in this prospectus (including the issuance of securities thereunder and the issuance of Shares upon the exercise of options issued pursuant thereto);

S-15

Table of Contents

the conversion of securities or the exercise of warrants outstanding at the date of this prospectus and described in this prospectus; and

the issuance of shares of our common stock to one or more counterparties in connection with the consummation a strategic partnership, joint venture, collaboration or the acquisition or license of any business products or technology; *provided that*, (1) the sum of the aggregate number of share of our common stock so issued shall not exceed 5% of the total outstanding shares of our common stock immediately following the completion of this offering of shares of our common stock and (2) prior to the issuance of such shares of our common stock each recipient of such share of our common stock agrees in writing not to sell, offer, dispose of or otherwise transfer any such shares of our common stock during the 90-day period without the prior written consent of J.P. Morgan Securities LLC and Deutsche Bank Securities Inc. (which consent may be withheld at their sole discretion).

Our directors and executive officers have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons or entities, with limited exceptions described below, for a period of 90 days after the date of this prospectus, may not, directly or indirectly, without the prior written consent of J.P. Morgan Securities LLC and Deutsche Bank Securities Inc. on behalf of the underwriters, sell, offer, contract or grant any option to sell (including without limitation any short sale), pledge, transfer, establish an open put equivalent position within the meaning of Rule 16a-1(h) under the Exchange Act, or otherwise dispose of any shares of our common stock, options or warrants to acquire shares of our common stock, or securities exchangeable or exercisable for or convertible into shares of our common stock currently or hereafter owned either of record or beneficially (as defined in Rule 13d-3 under the Exchange Act) such person or entity, or publicly announce an intention to do any of the foregoing. Notwithstanding the foregoing, if (1) during the last 17 days of the 90-day restricted period, we issue an earnings release or material news or a material event relating to our company occurs; or (2) prior to the expiration of the 90-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 90-day period, the restrictions described above shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event unless J.P. Morgan Securities LLC and Deutsche Bank Securities Inc. waive, in writing, such an extension. The foregoing sentence will not apply if (i) the shares of our common stock are actively traded securities (as defined in Regulation M), (ii) we meet the applicable requirements of paragraph (a)(1) of Rule 139 under the Securities Act in the manner contemplated by NASD Conduct Rule 2711(f)(4), and (iii) the provisions of NASD Conduct Rule 2711(f)(4) do not restrict the publishing or distribution of any research reports relating to us published or distributed by any of the underwriters during the 15 days before or after the last day of the 90-day period (before giving effect to such extension).

The restrictions described in the immediately preceding paragraph do not apply, subject to certain conditions, to the following:

the transfer of shares of our common stock by gift, will or intestate succession to any immediate family member of such person or to a trust the beneficiaries of which are exclusively such person and/or a member or members of his immediate family;

the transfer of share of our common stock solely to satisfy tax obligations related to the delivery of shares of our common stock pursuant to the vesting of restricted stock units granted to such person;

transactions relating to shares of our common stock or other securities acquired in open market transactions after the completion of this offering;

the sale of shares of common stock pursuant to a written plan, existing as of the date hereof, meeting the requirements of Rule 10b5-1(c) under the Exchange Act, if then permitted by us and applicable law; provided that any filing made under the Exchange Act in connection therewith shall state that such sales were made pursuant to a written plan meeting the requirements of Rule 10b5-1(c) under the Exchange Act;

the exercise of any options or warrants to purchase shares of our common stock (including by cashless exercise to the extent permitted by the instruments representing such options or warrants); provided,

S-16

Table of Contents

however, that in any such case the shares of our common stock issued upon exercise shall remain subject to the provisions of this letter agreement; or

the entry into any trading plan established pursuant to Rule 10b5-1 of the Exchange Act, provided that no sales or other dispositions may occur under such plan until the expiration of the 90-day restricted period and that no filing or other public announcement, whether under the Exchange Act or otherwise, shall be required or shall be made by the signatory or us in connection with the trading plan during such restricted period.

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

Our common stock is listed on The NASDAQ Global Select Market under the symbol NBIX.

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

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

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on The NASDAQ Global Select Market, in the over-the-counter market or otherwise.

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

If you purchase the shares of common stock offered in this prospectus, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus.

S-17

Table of Contents

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Certain of the underwriters and their affiliates may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us and our affiliates in the ordinary course of their business, for which they may receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans.

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State) an offer to the public of any securities which are the subject of the offering contemplated by this prospectus may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any securities may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

to any legal entity which is a qualified investor as defined in the Prospectus Directive;

to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the joint book-running managers for any such offer; or

in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of the securities shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an offer to the public in relation to any securities in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any securities to be offered so as to enable an investor to decide to purchase any securities, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression Prospectus Directive means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State, and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

United Kingdom

Each underwriter has represented and agreed that:

it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity within the meaning of Section 21 of the Financial Services and Markets Act 2000, or the FSMA, received by it in connection with the issue or sale of the securities in circumstances in which Section 21(1) of the FSMA does not apply to us; and

S-18

Table of Contents

it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the securities in, from or otherwise involving the United Kingdom.

Switzerland

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

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

Notice to Prospective Investors in the Dubai International Financial Centre

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

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission (ASIC), in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001 (the Corporations Act), and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons (the Exempt Investors) who are sophisticated investors (within the meaning of section 708(8) of the Corporations Act), professional investors (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter

6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities

S-19

Table of Contents

recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Hong Kong

The shares may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), or (ii) to professional investors within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a prospectus within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to professional investors within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Singapore

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

Where the shares are subscribed or purchased under Section 275 by a relevant person which is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for 6 months after that corporation or that trust has acquired the shares under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the Financial Instruments and Exchange Law) and each underwriter has agreed that it will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

S-20

Table of Contents

Legal Matters

The validity of the common stock offered by this prospectus supplement and the accompanying prospectus will be passed upon for us by Cooley LLP, San Diego, California. Latham & Watkins LLP, San Diego, California, is counsel for the underwriters in connection with this offering.

Experts

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2014, and the effectiveness of our internal control over financial reporting as of December 31, 2014, as set forth in their reports, which are incorporated by reference in this prospectus supplement and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's reports, given on their authority as experts in accounting and auditing.

Where You Can Find More Information

This prospectus supplement and the accompanying prospectus are part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and do not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus supplement or the accompanying prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference in this prospectus supplement and the accompanying prospectus for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

Incorporation of Certain Information by Reference

The SEC allows us to incorporate by reference information from other documents that we file with them, 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 this prospectus supplement and the accompanying prospectus. Information contained in this prospectus supplement and the accompanying prospectus and information that we file with the SEC in the future and incorporate by reference in this prospectus supplement and the accompanying prospectus will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings (other than Current Reports on Form 8-K furnished under Item 2.02 or Item 7.01 and exhibits furnished along with such form that are related to such items) we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of the prospectus supplement and before the sale of all the securities covered by this prospectus supplement:

our Annual Report on Form 10-K for the year ended December 31, 2014, filed with the SEC on February 9, 2015;

Edgar Filing: NEUROCRINE BIOSCIENCES INC - Form 424B5

our Current Reports on Form 8-K (other than information furnished rather than filed) filed with the SEC on February 5, 2015;

our Definitive Proxy Statement on Schedule 14A, filed with the SEC on April 18, 2014 (other than the portions thereof which are furnished and not filed);

S-21

Table of Contents

the description of our common stock contained in our registration statement on Form S-1, filed with the SEC on May 10, 1996, including any amendment or reports filed for the purpose of updating such description (Registration No. 333-03172); and

all filings we make with the SEC pursuant to the Exchange Act after the date of this prospectus supplement and before termination of this offering.

You can request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

Neurocrine Biosciences, Inc.

12780 El Camino Real

San Diego, CA 92130

(858) 617-7600

Attn: Investor Relations

S-22

Table of Contents

PROSPECTUS

February 25, 2014

COMMON STOCK

We may, from time to time, offer to sell common stock in amounts, at prices and on terms described in one or more supplements to this prospectus.

This prospectus describes some of the general terms that may apply to an offering of our common stock. The specific terms and any other information relating to a specific offering will be set forth in a post-effective amendment to the registration statement of which this prospectus is a part or in a supplement to this prospectus or may be set forth in one or more documents incorporated by reference in this prospectus. The amendment or supplement, as applicable, may also add, update or change information contained in this prospectus with respect to that specific offering.

Our securities may be offered and sold in the same offering or in separate offerings; to or through underwriters, dealers, and agents; or directly to purchasers; or through a combination of these methods. The names of any underwriter, dealer or agents involved in the sale of our securities and their compensation will be described in an applicable prospectus supplement. See Plan of Distribution.

Our common stock trades on The NASDAQ Global Select Market under the symbol NBIX. On February 24, 2014, the last reported sale price of our common stock on The NASDAQ Global Select Market was \$17.84 per share.

Investing in our securities involves significant risks. See Risk Factors on Page 1 of this prospectus and in the applicable prospectus supplement before investing in any securities.

Neither the Securities and Exchange Commission nor any state securities commission or other regulatory body 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.

Table of Contents

TABLE OF CONTENTS

<u>About This Prospectus</u>	i
<u>Prospectus Summary</u>	1
<u>Risk Factors</u>	1
<u>Forward Looking Statements</u>	1
<u>Use Of Proceeds</u>	2
<u>Description Of Capital Stock</u>	2
<u>Plan of Distribution</u>	4
<u>Legal Matters</u>	5
<u>Experts</u>	5
<u>Where You Can Find More Information</u>	6
<u>Incorporation by Reference</u>	7

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using the shelf registration process as a well-known seasoned issuer, as defined in Rule 405 under the Securities Act of 1933, as amended, or the Securities Act. By using a shelf registration statement, we may offer and sell from time to time in one or more offerings the common stock described in this prospectus. No limit exists on the aggregate number of shares of common stock we may sell pursuant to the registration statement.

Neither we nor the underwriters have authorized anyone to provide you with information different from that contained in or incorporated by reference into this prospectus or any applicable prospectus supplement. We take no responsibility for, and can provide no assurance as to the reliability of, any information that others may give you. This document may only be used where it is legal to sell these securities. You should not assume that the information contained in this prospectus, or in any prospectus supplement, is accurate as of any date other than its date regardless of the time of delivery of the prospectus or prospectus supplement or any sale of the common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus and the information incorporated herein by reference includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference in this prospectus are the property of their respective owners.

We urge you to read carefully both this prospectus and any prospectus supplement accompanying this prospectus, together with the information incorporated herein by reference as described under the heading Where You Can Find More Information, before deciding whether to invest in any of the securities being offered.

Table of Contents

PROSPECTUS SUMMARY

The following summary does not contain all of the information that may be important to purchasers of our securities. Prospective purchasers of securities should carefully review the detailed information and financial statements, including the notes thereto, appearing elsewhere in or incorporated by reference into this prospectus and any prospectus supplement.

Company Overview

We discover and develop innovative and life-changing pharmaceuticals, in diseases with high unmet medical needs, through our novel R&D platform, focused on neurological and endocrine based diseases and disorders. Utilizing a portfolio approach to drug discovery, we have multiple small-molecule drug candidates at various stages of pharmaceutical development. We develop proprietary pharmaceuticals for our pipeline, as well as collaborate with other pharmaceutical companies on our discoveries. Our two lead late-stage clinical programs are elagolix, a gonadotropin-releasing hormone antagonist in Phase III development for endometriosis and Phase II clinical studies of uterine fibroids that is partnered with AbbVie Inc., and a wholly owned vesicular monoamine transporter 2, or VMAT2, inhibitor for the treatment of movement disorders that is currently in Phase II development. We intend to maintain certain commercial rights to our VMAT2 inhibitor and evolve into a fully-integrated pharmaceutical company.

Corporate Information

We were originally incorporated in California in January 1992 and were reincorporated in Delaware in May 1996. Our principal executive offices are located at 12780 El Camino Real, San Diego, California 92130. Our telephone number is (858) 617-7600. Our website is www.neurocrine.com. We make available free of charge through our website our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus and should not be considered part of this prospectus.

References in this prospectus to Neurocrine, we, us, and our are to Neurocrine Biosciences, Inc. and its subsidiaries. The term you refers to a prospective investor.

RISK FACTORS

Investing in our securities involves risks. Please see the risk factors described under the caption Risk Factors in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K, which are on file or will be filed with the SEC and are incorporated by reference in this prospectus and in any accompanying prospectus supplement. Before making an investment decision, you should carefully consider these risks as well as information we include or incorporate by reference in this prospectus and in any accompanying prospectus supplement. The risks and uncertainties we have described are not the only ones that we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business or operations. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

FORWARD-LOOKING STATEMENTS

This prospectus, each prospectus supplement and the information incorporated by reference in this prospectus and each prospectus supplement contain forward-looking statements within the meaning of

Table of Contents

Section 27A of the Securities Act, and Section 21E of the Exchange Act that involve a number of risks and uncertainties. Although our forward-looking statements reflect the good faith judgment of our management, these statements can only be based on facts and factors currently known by us. Consequently, these forward-looking statements are inherently subject to risks and uncertainties, and actual results and outcomes may differ materially from results and outcomes discussed in the forward-looking statements.

Forward-looking statements can be identified by the use of forward-looking words such as believes, expects, hopes, may, will, plan, intends, estimates, could, should, would, continue, seeks, pro forma, or anti words (including their use in the negative), or by discussions of future matters such as the development of new products, technology enhancements, possible collaborations, possible changes in legislation and other statements that are not historical. These statements include but are not limited to statements under the captions Business, Risk Factors and Management's Discussion and Analysis of Financial Condition and Results of Operations and in other sections incorporated by reference from our Annual Report on Form 10-K and Quarterly Reports on Form 10-Q, as applicable, as well as our other filings with the SEC. You should be aware that the occurrence of any of the events discussed under the heading Risk Factors in any applicable prospectus supplement and any documents incorporated by reference herein or therein could substantially harm our business, results of operations and financial condition and that if any of these events occurs, the trading price of our common stock could decline and you could lose all or a part of the value of your common stock.

The cautionary statements made in this prospectus are intended to be applicable to all related forward-looking statements wherever they may appear in this prospectus or in any prospectus supplement or any documents incorporated by reference herein or therein. We urge you not to place undue reliance on these forward-looking statements, which speak only as of the date they are made. Except as required by law, we assume no obligation to update our forward-looking statements, even if new information becomes available in the future.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of the securities offered hereby. Unless otherwise indicated in any prospectus supplement or in any related free writing prospectus that we may authorize to be provided to you, we currently intend to use the net proceeds from the sale of our common stock under this prospectus for general corporate purposes, which may include clinical and preclinical development of our drug candidates, research and development expenses, general and administrative expenses, manufacturing expenses, and potential acquisitions of companies and technologies that complement our business. Pending these uses, we intend to invest the net proceeds primarily in short-term, interest-bearing instruments or other investment-grade securities.

DESCRIPTION OF CAPITAL STOCK

As of the date of this prospectus, our certificate of incorporation, as amended, authorizes us to issue 110,000,000 shares of common stock, par value \$0.001 per share, and 5,000,000 shares of preferred stock, par value \$0.001 per share. As of February 20, 2014, 67,802,293 shares of common stock were outstanding and no shares of preferred stock were outstanding.

The following summary describes the material terms of our capital stock. The description of capital stock is not complete and may not contain all the information you should consider before investing in our capital stock. This description is summarized from, and is qualified by reference to, our certificate of incorporation, as amended, and our bylaws, as amended, which are incorporated by reference as exhibits into the registration statement of which this prospectus is a part. See Where You Can Find More Information and Incorporation by Reference.

Table of Contents

Common Stock

Voting. Common stockholders are entitled to one vote per share for the election of directors and on all other matters that require stockholder approval, and do not have cumulative voting rights.

Dividends and Other Distributions. Subject to any preferential rights of outstanding preferred stock, if any, holders of our common stock are entitled to share ratably in any dividends declared by our board of directors on the common stock and paid out of funds legally available for such dividends.

Distribution on Dissolution. Subject to any preferential rights of outstanding preferred stock, if any, in the event of our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in any assets remaining after payment of liabilities and the liquidation preferences of any outstanding preferred stock.

Other Rights. Our common stock does not carry any preemptive rights enabling a holder to subscribe for, or receive shares of, any class of our common stock or any other securities convertible into shares of any class of our common stock. There are no redemption rights or sinking fund provisions applicable to our common stock.

Preferred Stock

We currently have no outstanding shares of preferred stock. Under our certificate of incorporation, as amended, our board of directors is authorized to issue shares of our preferred stock from time to time, in one or more classes or series, without stockholder approval. Prior to the issuance of shares of each series, the board of directors is required by the Delaware General Corporation Law, or the DGCL, and our certificate of incorporation, as amended, to adopt resolutions and file a certificate of designation with the Secretary of State of the State of Delaware. The certificate of designation would fix for each class or series the designations, powers, preferences, rights, qualifications, limitations and restrictions, including the following:

the number of shares constituting each class or series;

voting rights;

rights and terms of redemption, including sinking fund provisions;

dividend rights and rates;

dissolution;

terms concerning the distribution of assets;

conversion or exchange terms;

redemption prices; and

liquidation preferences.

Any future issuance of additional preferred stock could adversely affect the voting power of holders of common stock and reduce the likelihood that common stockholders will receive dividend payments and payments upon liquidation. Such an issuance could have the effect of decreasing the market price of the common stock. Such an issuance also could have the effect of delaying, deterring or preventing a change in control of us.

Anti-Takeover Provisions

Delaware Law. We are subject to the provisions of Section 203 of the DGCL. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years after the date of the transaction in which the person became an interested stockholder. Generally, a business combination includes a merger, asset sale or other transaction resulting in a financial benefit to the stockholder. An interested stockholder is a person who either owns 15% or more of our

Table of Contents

outstanding voting stock or, together with affiliates and associates, owns or, within three prior years, did own, 15% or more of our outstanding voting stock. These restrictions do not apply if:

before the date that the person became an interested stockholder, our board of directors approved either the business combination or the transaction which makes the person an interested stockholder ;

the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (i) shares owned by persons who are directors and also officers and (ii) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

on or after the date that the person became an interested stockholder, the business combination is approved by (i) our board of directors and (ii) authorized at annual or special meeting of our stockholders by the affirmative vote of at least 66 2/3% of our outstanding voting stock that is not owned by the interested stockholder.

The statute could have the effect of delaying, deferring, or preventing a change in control.

Bylaw and Certificate of Incorporation Provisions. Our bylaws, as amended, provide that special meetings of our stockholders may be called by our board of directors, the chairman of our board of directors, our President or by one or more stockholders holding 10% of the votes entitled to be cast at that meeting. Our certificate of incorporation, as amended, (i) provides for a board comprised of three classes of directors with each class serving a staggered three-year term, (ii) authorizes our board of directors to issue preferred stock from time to time, in one or more classes or series, without stockholder approval, (iii) requires the approval of at least two-thirds of the outstanding voting stock to amend certain provisions of our certificate of incorporation, as amended, and our bylaws, as amended and (iv) does not include a provision for cumulative voting for directors. Under cumulative voting, a minority stockholder holding a sufficient percentage of a class of shares may be able to ensure the election of one or more directors. These and other provisions contained in our certificate of incorporation, as amended, and bylaws, as amended, could delay or discourage transactions involving an actual or potential change in control of us or our management, including transactions in which stockholders might otherwise receive a premium for their shares over then current prices. Such provisions could also limit the ability of stockholders to remove current management or approve transactions that stockholders may deem to be in their best interests and could adversely affect the price of our common stock.

Listing

Our common stock is listed on The NASDAQ Global Select Market under the symbol NBIX.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC. The transfer agent and registrar's address is 59 Maiden Lane, New York, New York 10038.

PLAN OF DISTRIBUTION

We may sell the offered securities in one or more of the following ways:

through an underwriter or underwriters;

through dealers;

through agents;

directly to one or more purchasers, including affiliates of ours; or

through a combination of any of these methods of sale.

Table of Contents

The applicable prospectus supplement will contain the terms of the offerings of any securities. The public offering price and any discount or concessions allowed or reallocated to dealers may be changed from time to time. The applicable prospectus supplement will contain the expected time of delivery of the securities for which this prospectus is delivered.

Unless otherwise indicated in the applicable prospectus supplement, if underwriters are used in the sale of the securities, the underwriting agreement will provide that the obligations of the underwriters are subject to certain conditions precedent and that the underwriters will be obligated to purchase all of the securities if any are purchased. In connection with the sale of securities, underwriters may receive compensation from us or purchasers of securities for whom they may act as agents in the form of discounts, concessions or commissions. Underwriters may sell securities to or through dealers, and dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agent.

Underwriters, agents or dealers participating in the distribution of securities may be deemed to be underwriters, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions under the Securities Act. The securities may be sold in one or more transactions either at a fixed price or at prices which may be changed based on market prices prevailing at the time of sale, at prices related to the prevailing market prices or at negotiated prices.

We may indemnify the underwriters, agents or dealers who participate in the distribution of securities against certain liabilities, including liabilities under the Securities Act. We may also contribute to payments that the underwriters, dealers or agents or any of their controlling persons may be required to make in respect of such liabilities. Underwriters, agents or dealers may be customers of, engage in transactions with or perform services for us or our subsidiaries in the ordinary course of business.

If so indicated in a prospectus supplement, we will authorize underwriters, dealers and agents to solicit offers by certain institutions to purchase securities from us pursuant to delayed delivery contracts providing for payment and delivery on the date stated in the prospectus supplement. These contracts will be subject only to those conditions contained in the prospectus supplement. The prospectus supplement will also contain the commission payable for solicitation of any of these contracts.

Offers to purchase securities may be solicited directly by us and sales of securities may be made by us directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act, with respect to any resale of the securities. The terms of any such sales will be described in the prospectus supplement relating to the securities. Except as contained in the applicable prospectus supplement, no director, officer or employee of ours will solicit or receive a commission in connection with the direct sales by us of the securities, although these persons may respond to inquiries by potential purchasers and perform ministerial and clerical work in connection with any such direct sales.

LEGAL MATTERS

The validity of the common stock being offered by this prospectus will be passed upon for us by Cooley LLP, San Diego, California.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2013, and the effectiveness of our

internal control over financial reporting as of December 31, 2013, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's reports, given on their authority as experts in accounting and auditing.

Table of Contents

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov. You may also read and copy any document we file at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the SEC's public reference room in Washington, D.C. by calling the SEC at 1-800-SEC-0330.

This prospectus is part of a registration statement we filed with the SEC. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You can obtain a copy of the registration statement, at prescribed rates, from the SEC at the address listed above. The registration statement and the documents referred to below under "Incorporation by Reference" are also available on our corporate website, www.neurocrine.com. We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

Table of Contents

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference in this prospectus the information that we file with it. This means that we can disclose important information to you in this document by referring you to other filings we have made with the SEC. The information incorporated by reference is considered to be part of this prospectus. The information incorporated by reference in this prospectus is accurate only as of the date of the information on the front cover of the applicable document, or such earlier date as is expressly stated or otherwise apparent with respect to such incorporated information in the applicable document, regardless of the time of delivery of this prospectus or any sale of securities.

This prospectus incorporates by reference the documents listed below, which we have filed with the SEC:

our Annual Report on Form 10-K for our fiscal year ended December 31, 2013, filed on February 11, 2014;

our Current Report on Form 8-K filed on February 25, 2014;

our Definitive Proxy Statement on Schedule 14A filed on April 19, 2013; and

the description of our common stock set forth in our registration statement on Form 8-A, filed on April 3, 1996, including any amendments or reports filed for the purposes of updating this description.

We incorporate by reference any additional documents that we may file with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than the portions of those made pursuant to Item 2.02 or Item 7.01 of Form 8-K or other information furnished to the SEC) between the date that we initially filed the registration statement to which this prospectus relates and the termination of the offering of the securities. These documents may include periodic reports, like 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 material that we subsequently file with the SEC will automatically update and replace the information previously filed with the SEC.

This prospectus may contain information that updates, modifies or is contrary to information in one or more of the documents incorporated by reference in this prospectus. You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

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

Requests for such documents should be directed to:

Neurocrine Biosciences, Inc.

12780 El Camino Real

San Diego, CA 92130

(858) 617-7600

Attn: Investor Relations

In addition, copies of our filings are available through our corporate website at www.neurocrine.com as soon as reasonably practicable after we electronically file such material with, or furnish it, to the SEC.

Table of Contents

\$225,000,000

Common Stock

Prospectus Supplement

Joint Book-Running Managers

J.P. Morgan

Deutsche Bank Securities

, 2015