

PROSPECTUS SUPPLEMENT
(to the Prospectus dated December 3, 2007)

4,784,689 Shares



NEUROCRINE BIOSCIENCES, INC.

Common Stock

\$2.09 per share

We are offering 4,784,689 shares of our common stock to certain institutional investors pursuant to this prospectus supplement and the accompanying prospectus.

Our common stock is quoted on the NASDAQ Global Select Market under the symbol "NBIX." On December 16, 2009, the last reported sale price of our common stock on the NASDAQ Global Select Market was \$2.27.

This investment involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" on page S-3 of this prospectus supplement.

	Per Share	Total
Offering price and proceeds, before expenses, to Neurocrine Biosciences, Inc.	\$2.09	\$10,000,000

Delivery of the shares is expected to be made on or about December 22, 2009, against payment for such shares to be received by us on the same date.

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.

The date of this prospectus supplement is December 16, 2009.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, including the documents incorporated by reference, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. We urge you to carefully read this prospectus supplement and the accompanying prospectus, and the documents incorporated herein and therein, before buying any of the securities being offered under this prospectus supplement. This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent that any statement that we make in this prospectus supplement is inconsistent with statements made in the accompanying prospectus or any documents incorporated by reference therein, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying prospectus and such documents incorporated by reference therein.

You should rely only on the information contained in, or incorporated by reference into, this prospectus supplement and contained in, or incorporated by reference into, the accompanying prospectus. We have not authorized anyone to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus supplement and the accompanying prospectus. You should not rely on any unauthorized information or representation. This prospectus supplement is an offer to sell only the securities offered hereby, and only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus supplement and the accompanying prospectus is accurate only as of the date on the front of the applicable document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus supplement or the accompanying prospectus, or any sale of a security.

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.

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.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights 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 into 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. If you invest in our common stock, you are assuming a high degree of risk. See “Risk Factors.”

About Neurocrine Biosciences, Inc.

Our Business

We discover, develop and intend to commercialize drugs for the treatment of neurological and endocrine-related diseases and disorders. Our product candidates address some of the largest pharmaceutical markets in the world, including endometriosis, anxiety, depression, pain, diabetes, benign prostatic hyperplasia, irritable bowel syndrome, and other neurological and endocrine related diseases and disorders. We currently have eight programs in various stages of research and development, including six programs in clinical development. While we independently develop many of our product candidates, we are in a collaboration for two of our programs. Our lead clinical development program, elagolix, is a drug candidate for the treatment of endometriosis.

Company Information

We were originally incorporated in the State of California in January 1992 and were reincorporated in the State of 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.

The Offering

Common stock offered by us	4,784,689 shares of common stock
Use of proceeds	We intend to use the net proceeds from the sale of securities under this prospectus supplement to fund our research and development efforts, and for general corporate purposes, including working capital. We may also use a portion of the net proceeds from this sale 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. See “Use of Proceeds” on page S-5.
NASDAQ Global Select Market symbol	NBIX
Risk factors	This investment involves a high degree of risk. See “Risk Factors” beginning on page S-3 of this prospectus supplement.

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, along with the risks discussed under the section captioned "Risk Factors" contained in our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2009, which are incorporated by reference into this prospectus supplement and the accompanying prospectus in their entirety, together with other information in this prospectus supplement, the accompanying prospectus, the information and documents incorporated by reference, and in any free writing prospectus that we have authorized for use in connection with this offering. If any of these risks actually 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 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 substantial dilution in the net tangible book value of the common stock you purchase in this offering. Based on the offering price of \$2.09 per share, if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of \$1.84 per share in the net tangible book value of the common stock. See the section entitled "Dilution" on page S-6 for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus, the documents we have filed with the Securities and Exchange Commission, or 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 of clinical trials involving our drug candidates;
- the progress of our research and development programs;
- the benefits to be derived from relationships with our collaborators;
- the receipt of regulatory clearances and approvals;
- 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”, “expects”, “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” contained in 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 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 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.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of the 4,784,689 shares of common stock that we are offering will be approximately \$9.9 million, net of estimated offering expenses payable by us.

We intend to use the net proceeds from the sale of the securities under this prospectus supplement to fund our research and development efforts, and for general corporate purposes, including working capital. We may also use a portion of the net proceeds from the sale of the securities under this prospectus supplement 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, 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, we will retain broad discretion over the use of these proceeds. Pending use of the net proceeds as described above, we intend to temporarily invest the proceeds in short and long-term interest bearing instruments.

DILUTION

Our net tangible book value as of September 30, 2009 was approximately \$1.1 million, or \$0.03 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 September 30, 2009. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this public offering and the net tangible book value per share of our common stock immediately after this public offering.

After giving effect to the sale of 4,784,689 shares of our common stock under this prospectus at an offering price of \$2.09 per share and after deducting the estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2009 would have been approximately \$11.0 million, or \$0.25 per share. This represents an immediate increase in net tangible book value of \$0.22 per share to existing stockholders and immediate dilution in net tangible book value of \$1.84 per share to new investors purchasing our common stock in this offering. The following table illustrates this dilution on a per share basis:

Offering price per share	\$2.09
Net tangible book value per share as of September 30, 2009	\$0.03
Increase in net tangible book value per share attributable to the offering	\$0.22
Pro forma net tangible book value per share as of September 30, 2009, after giving effect to the offering	\$0.25
Dilution per share to new investors in the offering	\$1.84

The above discussion and table are based on 39,206,876 shares outstanding as of September 30, 2009 and excludes:

- 3,116,637 shares of common stock reserved for the exercise of options outstanding at a weighted average exercise price of \$20.47;
- 685,873 shares of common stock reserved for the vesting of restricted stock units;
- 3,940 shares of common stock reserved for the exercise of warrants outstanding at an exercise price of \$52.05; and
- 1,983,646 shares of common stock reserved for issuance under our stock incentive programs.

To the extent that outstanding options or warrants are exercised or restricted stock units vest, you 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.

PLAN OF DISTRIBUTION

We are selling 4,784,689 shares of our common stock under this prospectus supplement directly to certain institutional investors at a price of \$2.09 per share. We currently anticipate that the closing of the sale of such shares under this prospectus supplement will take place on or about December 22, 2009. On the closing date, we will issue the shares of common stock to the institutional investors and we will receive funds in the amount of the aggregate purchase price.

We have entered into subscription agreements, each dated as of December 16, 2009, with the institutional investors relating to the sale of our common stock offered under this prospectus supplement.

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

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

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus supplement and the accompanying prospectus will be passed upon for us by Cooley Godward Kronish 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, 2008, and management's assessment of the effectiveness of our internal control over financial reporting as of December 31, 2008, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements and management's assessment 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 into 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 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.

INFORMATION INCORPORATED 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 into 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 filed on 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 this 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, 2008 (filed on February 4, 2009);
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2008 from our definitive proxy statement on Schedule 14A, filed with the SEC on April 21, 2009;
- our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2009 (filed with the SEC on May 6, 2009), June 30, 2009 (filed with the SEC on July 30, 2009) and September 30, 2009 (filed with the SEC on October 29, 2009);
- our Current Reports on Form 8-K filed with the SEC on January 16, 2009, May 5, 2009, September 1, 2009, September 15, 2009 and October 1, 2009 (other than the portions of these reports furnished but not filed pursuant to SEC rules and the exhibits filed on such form that relate to such portions); and
- the description of our common stock contained in our registration statement on Form S-1, filed with the SEC on May 17, 1996, including any amendment or reports filed for the purpose of updating such description (Registration No. 333-03172).

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

Dated December 3, 2007

PROSPECTUS

\$150,000,000



NEUROCRINE BIOSCIENCES, INC.

Common Stock

Our common stock is listed on the Nasdaq Global Select Market under the symbol "NBIX." On November 30, 2007, the last reported sale price of our common stock on the Nasdaq Global Select Market was \$13.02 per share.

This prospectus and the accompanying prospectus supplement will allow us to sell shares of our common stock over time in one or more offerings, with an aggregate offering price of up to \$150,000,000. Each time we offer shares of our common stock, we will provide you with a supplement to this prospectus. You should read this prospectus, the information incorporated by reference in this prospectus and any prospectus supplement carefully before you invest.

Investing in our common stock involves a high degree of risk. See "Risk Factors" on page 2 of this prospectus and as updated in our future filings made with the Securities and Exchange Commission, which are incorporated by reference in this prospectus.

This prospectus may not be used to offer or sell any common stock unless accompanied by a prospectus supplement.

The common stock may be sold by us to or through underwriters or dealers, directly to purchasers or through agents designated from time to time. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus. If any underwriters are involved in the sale of any common stock with respect to which this prospectus is being delivered, the names of such underwriters and any applicable discounts or commissions and over-allotment options will be set forth in a prospectus supplement. The price to the public of such common stock and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

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

The date of this prospectus is December 3, 2007.

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You should rely only on the information contained in or incorporated by reference into this prospectus or any applicable prospectus supplement. We have not authorized anyone to provide you with different information. We are not making an offer to sell or seeking an offer to buy shares of our common stock under this prospectus or any applicable prospectus supplement in any jurisdiction where the offer or sale is not permitted. The information contained in this prospectus, any applicable prospectus supplement and the documents incorporated by reference herein and therein are accurate only as of their respective dates, regardless of the time of delivery of this prospectus or any sale of a security.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (SEC) using a “shelf” registration process. Under this shelf registration statement, we may sell shares of our common stock in one or more offerings up to a total dollar amount of \$150,000,000. This prospectus provides you with a general description of the common stock we may offer. Each time we sell any of our common stock under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of that offering. We may also add, update or change in a prospectus supplement any of the information contained in this prospectus or in documents we have incorporated by reference into this prospectus. This prospectus, together with any applicable prospectus supplement and the documents incorporated by reference into this prospectus, include all material information relating to this offering. You should carefully read both this prospectus and any applicable prospectus supplement together with the additional information described under “Where You Can Find More Information” before buying common stock in this offering.

SUMMARY

The following summary does not contain all the information that may be important to purchasers of our common stock. Prospective purchasers of our common stock should carefully review the entire prospectus, including the financial statements and other information incorporated by reference in this prospectus, before making an investment decision.

NEUROCRINE BIOSCIENCES, INC.

We discover, develop and intend to commercialize drugs for the treatment of neurological and endocrine-related diseases and disorders. Our product candidates address some of the largest pharmaceutical markets in the world, including insomnia, anxiety, depression, endometriosis, irritable bowel syndrome, pain, diabetes and other neurological and endocrine-related diseases and disorders. We currently have ten programs in various stages of research and development, including six programs in clinical development. While we independently develop many of our product candidates, we have entered into a collaboration for one of our programs. Our lead clinical development program, indiplon, is a drug candidate for the treatment of insomnia.

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

Program	Target Indication	Status (1)	Commercial Rights
Products under clinical development:			
Indiplon	Insomnia	Registration (2)	Neurocrine
GnRH Antagonist	Endometriosis	Phase II	Neurocrine
CRF R1 Antagonist (3)	Mood Disorders, Irritable Bowel Syndrome	Phase II	GlaxoSmithKline/ Neurocrine
CRF R2 Peptide Agonist — Urocortin 2 (3)	Cardiovascular	Phase II	Neurocrine
Selective norepinephrine reuptake inhibitor (sNRI)	Neuropathic Pain	Phase I	Neurocrine
GnRH Antagonist	Benign Prostatic Hyperplasia	Phase I	Neurocrine
Research:			
Glucose Dependent Insulin Secretagogues	Type II Diabetes	Research	Neurocrine
GnRH Antagonist	Endometriosis, Benign Prostatic Hyperplasia	Research	Neurocrine
Adenosine2A Receptor Antagonists	Parkinson's Disease	Research	Neurocrine/Almirall
Ion Channel Blocker	Chronic Pain	Research	Neurocrine

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(1) “Registration” indicates that we or our collaborators have submitted a New Drug Application (NDA) to the U.S. Food and Drug Administration (FDA) for regulatory approval of the drug candidate. “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. “Phase I” indicates that we or our collaborators are conducting clinical trials with a smaller number of patients 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.

(2) On May 15, 2006, we received two complete responses from the FDA regarding the indiplon capsule and tablet NDAs. These responses indicated that indiplon 5 mg and 10 mg capsules were approvable (FDA Approvable Letter) and that the 15 mg tablets were not approvable (FDA Not Approvable Letter).

The FDA Not Approvable Letter requested that we reanalyze certain safety and efficacy data and questioned the sufficiency of the objective sleep maintenance clinical data with the 15 mg tablet in view of the fact that the majority of the indiplon tablet studies were conducted with doses higher than 15 mg. We held an end-of-review meeting with the FDA related to the FDA Not Approvable Letter in October 2006. This meeting was specifically focused on determining the actions needed to bring indiplon tablets from Not Approvable to Approval in the resubmission of the NDA for indiplon tablets. The FDA has requested additional long-term safety and efficacy data with the 15 mg dose for the adult population and the development of a separate dose for the elderly population. In discussions, we and the FDA noted positive efficacy data for sleep maintenance with both indiplon capsules and tablets. On the basis of these discussions, we are formulating a strategy to pursue a sleep maintenance claim for indiplon. The evaluation of indiplon for sleep maintenance is ongoing and includes both indiplon capsules and tablets.

The FDA Approvable Letter requested that we reanalyze data from certain preclinical and clinical studies to support approval of indiplon 5 mg and 10 mg capsules for sleep initiation and middle of the night dosing. The FDA Approvable Letter also requested reexamination of the safety analyses. We held an end-of-review meeting with the FDA related to the FDA Approvable Letter in August 2006. This meeting was specifically focused on determining the actions needed to bring indiplon capsules from Approvable to Approval in the resubmission of the NDA for indiplon capsules. At the meeting the FDA requested that the resubmission include further analyses and modifications of analyses previously submitted to address questions raised by the FDA in the initial review. This reanalysis has been completed. The FDA also requested, and we have completed, a supplemental pharmacokinetic/food effect profile of indiplon capsules including several meal types.

On June 12, 2007, we resubmitted our NDA for indiplon 5 mg and 10 mg capsules seeking clearance to market indiplon capsules for the treatment of insomnia. The FDA accepted the NDA resubmission and established a Prescription Drug User Fee Act (PDUFA) date of December 12, 2007. The PDUFA action date is the date by which the FDA is expected to have completed its review of the resubmission and to document its assessment through the issuance of an action letter.

(3) “R1 and R2” refer to two CRF receptor subtypes.

We were originally incorporated in California in January 1992 and were reincorporated in the state of Delaware in May 1996. Our corporate offices are located at 12790 El Camino Real, San Diego, California 92130. Our telephone number is (858) 617-7600. Our website address is www.neurocrine.com. Information contained in our website does not constitute part of this prospectus.

Unless otherwise specified or required by context, references in this prospectus to “we,” “us,” “our” and “Neurocrine” refer to Neurocrine Biosciences, Inc. and our subsidiaries on a consolidated basis.

RISK FACTORS

An investment in our common stock involves a high degree of risk. Before you make a decision to invest in our common stock, you should consider carefully the risks described in the section entitled “Risk Factors” contained in our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2007, as filed with the SEC on November 2, 2007, which is incorporated herein by reference in its entirety, as well as any amendment or update thereto reflected in subsequent filings with the SEC. If any of these risks actually occur, our business, operating results, prospects or financial condition could be materially and adversely affected. This could cause the trading price of our common stock to decline and you may lose part or all of your investment.

FORWARD-LOOKING STATEMENTS

This prospectus, including the information incorporated by reference herein, and any applicable prospectus supplement including the documents we incorporate by reference therein, contain forward-looking statements 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 “anticipates,” or other similar words (including their use in the negative), or by discussions of future matters such as the development of new products, technology enhancements, 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” above and 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

Except as described in any prospectus supplement, we currently intend to use the net proceeds from the sale of our common stock under this prospectus for general corporate purposes, including the 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. When shares of our common stock are offered, the prospectus supplement relating thereto will set forth our intended use for the net proceeds we receive from the sale of such shares. Pending the application of the net proceeds, we expect to invest the proceeds in short-term, interest-bearing instruments or other investment-grade securities.

DESCRIPTION OF CAPITAL STOCK

As of the date of this prospectus, our restated 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 November 28, 2007, 38,268,679 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 qualified by reference to our restated 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.

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 restated 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 (DGCL), and our restated 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;

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- 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 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 an 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 restated 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 restated 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

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of shares may be able to ensure the election of one or more directors. These and other provisions contained in our restated 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.

Transfer Agent and Registrar

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

Listing on the Nasdaq Global Select Market

Our common stock is listed on the Nasdaq Global Select Market under the symbol "NBIX."

PLAN OF DISTRIBUTION

We may sell our common stock covered by this prospectus in any of three ways (or in any combination):

- to or through underwriters or dealers;
- directly to one or more purchasers; or
- through agents.

We may distribute the common stock:

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

Each time we offer and sell common stock, we will provide a prospectus supplement or supplements that will describe the method of distribution and set forth the terms of the offering of our common stock covered by this prospectus, including:

- the name or names of any underwriters, dealers or agents;
- the amounts of common stock underwritten or purchased by each of them;
- the purchase price of the common stock and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional common stock from us;
- any underwriting discounts or commissions or agency fees and other items constituting underwriters' or agents' compensation;
- the public offering price of the common stock;
- any discounts, commissions or concessions allowed or reallowed or paid to dealers; and
- any securities exchange or market on which the common stock may be listed.

Any public offering price and any discounts or concessions allowed or reallowed or paid to dealers may be changed from time to time. We may determine the price or other terms of the common stock offered under this prospectus by use of an electronic auction. We will describe how any auction will determine the price or any other terms, how potential investors may participate in the auction and the nature of the obligations of the underwriter, dealer or agent in the applicable prospectus supplement.

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Underwriters or dealers may offer and sell the offered common stock from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. If underwriters or dealers are used in the sale of any common stock, the common stock will be acquired by the underwriters or dealers for their own account and may be resold from time to time in one or more transactions described above. The common stock may be either offered to the public through underwriting syndicates represented by managing underwriters, or directly by underwriters or dealers. Generally, the underwriters' or dealers' obligations to purchase the common stock will be subject to certain conditions precedent. The underwriters or dealers will be obligated to purchase all of the common stock if they purchase any of the common stock, unless otherwise specified in the prospectus supplement. We may use underwriters with whom we have a material relationship. We will describe the nature of any such relationship in the prospectus supplement, naming the underwriter.

We may sell the common stock through agents from time to time. The prospectus supplement will name any agent involved in the offer or sale of the common stock and any commissions we pay to them. Generally, any agent will be acting on a best efforts basis for the period of its appointment. We may authorize underwriters, dealers or agents to solicit offers by certain purchasers to purchase the common stock from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. The contracts will be subject only to those conditions set forth in the prospectus supplement, and the prospectus supplement will set forth any commissions we pay for solicitation of these contracts.

Agents, dealers and underwriters may be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act of 1933, as amended, or to contribution with respect to payments which the agents, dealers or underwriters may be required to make in respect thereof. Agents, dealers and underwriters may be customers of, engage in transactions with, or perform services for us in the ordinary course of business.

Any underwriter may engage in over-allotment, stabilizing transactions, short covering transactions and penalty bids in accordance with Regulation M under the Exchange Act of 1934. Over-allotment involves sales in excess of the offering size, which create a short position. This short sales position may involve either "covered" short sales or "naked" short sales. Covered short sales are short sales made in an amount not greater than the underwriters' over-allotment option to purchase additional shares in this offering described above. The underwriters may close out any covered short position either by exercising their over-allotment option or by purchasing shares in the open market, if possible. To determine how they will close the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market, as compared to the price at which they may purchase shares through the over-allotment option. Naked short sales are short sales in excess of the over-allotment option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that, in the open market after pricing, there may be downward pressure on the price of the shares that could adversely affect investors who purchase shares in this offering. Stabilizing transactions permit bids to purchase the underlying security for the purpose of fixing the price of the security so long as the stabilizing bids do not exceed a specified maximum. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a covering transaction to cover short positions.

Similar to other purchase transactions, an underwriter's purchase to cover the syndicate short sales or to stabilize the market price of our common stock may have the effect of raising or maintaining the market price of our common stock or preventing or mitigating a decline in the market price of our common stock. As a result, the price of the shares of our common stock may be higher than the price that might otherwise exist in the open market. The imposition of a penalty bid might also have an effect on the price of the shares if it discourages resales of the shares.

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Neither we nor the underwriters makes any representation or prediction as to the effect that the transactions described above may have on the price of the common stock. If such transactions are commenced, they may be discontinued without notice at any time.

LEGAL MATTERS

The validity of the common stock being offered hereby will be passed upon by Cooley Godward Kronish 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, 2006, and management's assessment of the effectiveness of our internal control over financial reporting as of December 31, 2006, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements and management's assessment 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

We file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's public reference room at 450 Fifth Street, N.W., Washington, D.C., 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference room. Our SEC filings are also available to the public at the SEC's website at <http://www.sec.gov>.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" the information we file with them, which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings we will make with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act of 1934 after the date of this prospectus until the termination of the offering of common stock covered by this prospectus (other than information furnished under Item 2.02 or Item 7.01 of Form 8-K):

- our annual report on Form 10-K for the year ended December 31, 2006 (filed on February 9, 2007), including all information incorporated by reference therein;
- our quarterly reports on Form 10-Q for the quarterly periods ended March 31, 2007 (filed on May 7, 2007), June 30, 2007 (filed on August 3, 2007), and September 30, 2007 (filed on November 2, 2007);
- our current reports on Form 8-K filed on January 16, 2007, January 23, 2007, February 21, 2007, May 31, 2007, June 6, 2007, June 13, 2007, August 22, 2007, October 26, 2007 and November 1, 2007;

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- the description of our common stock contained in our registration statement on Form 8-A, filed on April 3, 1996, including any amendment or reports filed for the purpose of updating such description; and
- all filings we make with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act of 1934 after the date of this prospectus and before the 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.
12790 El Camino Real
San Diego, CA 92130
(858) 617-7600
Attn: Investor Relations

This prospectus is part of a registration statement we filed with the SEC. That registration statement and the exhibits filed along with the registration statement contain more information about us. Because information about documents referred to in this prospectus is not always complete, you should read the full documents which are filed as exhibits to the registration statement. You may read and copy the full registration statement and its exhibits at the SEC's public reference rooms or its website.

4,784,689 Shares

Common Stock



Neurocrine Biosciences, Inc.

Prospectus Supplement

December 16, 2009