September 9, 2010

Via EDGAR and FedEx

Ms. Tabatha Akins
Mr. Jim B. Rosenberg
United States Securities and Exchange Commission
Division of Corporation Finance
450 Fifth Street, N.W.
Washington, D.C. 20549

Re: Neurocrine Biosciences, Inc.
Form 10-K for Fiscal Year Ended December 31, 2009
Filed February 8, 2010
Form 10-Q for the Quarterly Period Ended June 30, 2010
Filed July 29, 2010
Definitive Schedule 14A
Filed April 21, 2010
File No. 000-22705

Ladies and Gentlemen:

This letter is being transmitted by Neurocrine Biosciences, Inc. (the "***Company***") in response to comments received from the staff (the "***Staff***") of the Securities and Exchange Commission (the "***SEC***"), by letter dated August 27, 2010 (the "***Comment Letter***"), with respect to the Company's (i) Annual Report on Form 10-K for the fiscal year ended December 31, 2009 (the "***10-K***"), (ii) Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2010 (the "***10-Q***") and (iii) Definitive Proxy Statement on Schedule 14A filed on April 21, 2010 (the "***Proxy Statement***"). The text of the Staff's comments has been included in this letter in italics for your convenience, and we have numbered the paragraphs below to correspond to the numbering of the Comment Letter.

The Company acknowledges that the Staff has requested in the Comment Letter that the Company file an amendment to the 10-K to address comments 1, 2, 5 and 6. However, as more fully set forth below in the Company's responses to the Comment Letter, the Company respectfully submits that only comments 1 and 2(a) require further substantive disclosure by the Company. Accordingly, as an alternative to filing an amendment to the 10-K to address solely those comments, the Company respectfully requests that it be allowed to provide such further disclosure in future filings with the SEC, where applicable.

Form 10-K for Fiscal Year Ended December 31, 2009

Item 1. Business

Intellectual Property, page 13

1. *Please provide us draft disclosure to be included in an amendment to your December 31, 2009 Form 10-K to identify each of your material patents, including the patent number, duration and the product candidate to which the patent relates.*

   Response: The Company acknowledges the Staff's comment and proposes to provide text in substantially the form below in its future filings with the SEC, where applicable.

   > "Elagolix, our leading small molecule GnRH antagonist currently in clinical trials for the treatment of endometriosis, is covered by six issued U.S. patents relating to composition of matter, pharmaceutical compositions, and methods of use. U.S. Patent Nos. 6,872,728, 7,179,815 and 7,462,625 are due to expire in 2021 (not including potential patent term extensions of up to five years) while U.S. Patent Nos. 7,056,927, 7,176,211 and 7,419,983 are due to expire in 2024 (not including potential patent term extensions of up to five years).
   >
   > Urocortin 2 is an endogenous peptide ligand of the CRF_2 receptor which may be useful in the treatment of congestive heart failure based on preclinical efficacy and safety data. This peptide is covered by U.S. Patent Nos. 7,223,846 and 7,638,607, which are both due to expire in 2021 (not including potential patent term extensions of up to five years).
   >
   > Our highly selective VMAT2 inhibitor 98854 is currently in clinical trials and is subject to a pending patent application.
   >
   > Indiplon is our non-benzodiazepine $GABA_A$ receptor agonist for the treatment of insomnia. The compound is covered by U.S. Patent No. 6,399,621 which is due to expire in 2020 (not including a potential patent term extension of up to five years).
   >
   > Our CRF antagonist 561679 is currently in clinical trials for the treatment of depression and anxiety and is subject to a pending patent application. Our CRF antagonist program is subject to a collaboration agreement with GSK who controls patent prosecution and strategy for the program."

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Results of Operations of Years Ended December 31, 2009, 2008, and 2007, page 37

2. *You incurred $35.8 million, $55.3 million and $82.0 million on research and development activities in 2009, 2008 and 2007, respectively. However, your disclosures about the nature of your research and development expenses appear to be limited. Please refer to the Division of Corporation Finance "Current Issues and Rulemaking Projects Quarterly Update" under section VIII – Industry Specific Issues – Accounting and Disclosure by Companies Engaged in Research and Development Activities. You can find it at the following website address: http://www.sec.gov/divisions/corpfin/cfcrq032001.htm#secviii. Please provide us draft disclosure to be included in an amendment to your December 31, 2009 Form 10-K to disclose the following information for each of your major research and development projects:*

   a. *The costs incurred during each period presented and to date on the project;*

b. The nature, timing and estimated costs of the efforts necessary to complete the project;

c. The anticipated completion dates;

d. The risks and uncertainties associated with completing development on schedule, and the consequences to operations, financial position and liquidity if the project is not completed timely; and finally

e. The period in which material net cash inflows from significant projects are expected to commence.

Regarding a., if you do not maintain any research and development costs by project, disclose that fact and explain why management does not maintain and evaluate research and development costs by project. Provide other quantitative or qualitative disclosure that indicates the amount of the company's resources being used on the project.

Regarding b. and c., disclose the amount or range of estimated costs and timing to complete the phase in process and each future phase. To the extent that information is not estimable, disclose those facts and circumstances indicating the uncertainties that preclude you from making a reasonable estimate.

Response: The Company acknowledges the Staff's comment and respectfully submits that disclosures already contained in the 10-K address subsection a. of the comment in large part. Specifically, the Company directs the Staff's attention to the following disclosures contained on page 37 of the 10-K:

> "Research and development expenses decreased to $35.8 million during 2009 compared to $55.3 million in 2008. The $19.5 million decrease in research and development expenses was primarily due to cost savings related to our staff reductions in 2009 as well as lower external development expenses. The decrease in research and development staff levels reduced personnel costs by $5.8 million in 2009 compared to 2008. External development costs decreased by $9.4 million to $9.8 million in 2009 compared to $19.2 million in 2008. External development costs for our GnRH clinical program decreased to $8.9 million in 2009 compared to $16.0 million during 2008. External development costs related to our VMAT2 and urocortin 2 programs decreased by $1.3 million and $1.1 million, respectively, in 2009 compared to 2008. Additionally, laboratory costs decreased by $2.4 million during 2009 compared to 2008, primarily due to the staff reductions mentioned above. We currently have eight programs in various stages of research and development, including six programs in clinical development.

> Research and development expenses decreased to $55.3 million during 2008 compared to $82.0 million in 2007. The $26.7 million decrease in research and development expenses was primarily due to cost savings related to our staff reductions in 2007. The decrease in research and development staff levels reduced personnel costs by $15.2 million (44%) in 2008 compared to 2007. External development costs decreased by $5.1 million to $19.2 million in 2008 compared to $24.3 million in 2007. External development costs related to our VMAT2 and urocortin 2 programs increased by $1.5 million and $1.2 million, respectively, in 2008 compared to 2007. External development costs related to our subsequently suspended or halted indiplon and valnoctamide programs included expenses of $6.3 million during 2007. Additionally, laboratory costs decreased by $2.2 million during 2008 compared to 2007, primarily due to the staff reductions mentioned above."

However, the Company agrees that its disclosure could be enhanced as suggested by the Staff and proposes to address subsection a. of the comment by providing text in substantially the form below in its future filings with the SEC, where applicable.

> "Our research and development expenditures include costs related to preclinical and clinical trials, scientific personnel, equipment, consultants, sponsored research, stock-based compensation and allocated facility costs.
>
> We do not track fully burdened research and development costs separately for each of our drug candidates. We review our research and development expenses by focusing on four categories: external development, personnel, facility and depreciation, and other. External development expenses consist of costs associated with our external preclinical and clinical trials, including pharmaceutical development and manufacturing. Personnel expenses include salaries and wages, stock-based compensation and benefits. Other research and development expenses mainly represent lab supply expenses, consulting expenses and other allocated expenses. We currently have eight programs in various stages of research and development, including six programs in clinical development.

The following table presents our total research and development expenses by category:

	Years Ended December 31,		
	2009	2008	2007
		(In millions)	
External development expense:			
Elagolix	$ 8.9	$16.0	$16.7
Indiplon	0.2	—	4.0
Other	0.7	3.2	3.7
Total external development expense	9.8	19.2	24.4
R&D personnel expense	13.9	19.8	34.8
R&D facility and depreciation expense	8.8	9.1	9.9
Other R&D expense	3.3	7.2	12.9
Total research and development expense	$35.8	$55.3	$82.0

The $19.5 million decrease in research and development expenses was primarily due to cost savings related to our staff reductions in 2009 as well as lower external development expenses. The $26.7 million decrease in research and development expenses was primarily due to cost savings related to our staff reductions in 2007."

Regarding subsections b. through e. of the Staff's comment, the Company respectfully submits that disclosures already contained in the 10-K address such matters. Specifically, the Company directs the Staff's attention to the following disclosures contained on page 43 and page 44 of the 10-K:

"The funding necessary to execute our business strategies is subject to numerous uncertainties, which may adversely affect our liquidity and capital resources. Completion of clinical trials may take several years or more, but the length of time generally varies substantially according to the type, complexity, novelty and intended use of a product candidate. It is also important to note that if a clinical candidate is identified, the further development of that candidate can be halted or abandoned at any time due to a number of factors. These factors include, but are not limited to, funding constraints, safety or a change in market demand.

The nature and efforts required to develop our product candidates into commercially viable products include research to identify a clinical candidate, preclinical development, clinical testing, FDA approval and commercialization. This process may cost in excess of $1 billion and can take in excess of 10 years to complete for each product candidate.

We test our potential product candidates in numerous pre-clinical studies to identify disease indications for which our product candidates may show efficacy. We may conduct multiple clinical trials to cover a variety of indications for each product candidate. As we obtain results from trials, we may elect to discontinue clinical trials for certain product candidates or for certain indications in order to focus our resources on more promising product candidates or indications. The duration and the cost of clinical trials may vary significantly over the life of a project as a result of differences arising during the clinical trial protocol, including, among others, the following:

- we or the FDA or similar foreign regulatory authorities may suspend the trials;

- we may discover that a product candidate may cause harmful side effects;
- patient recruitment may be slower than expected; and
- patients may drop out of the trials.

For each of our programs, we periodically assess the scientific progress and merits of the programs to determine if continued research and development is economically viable. Certain of our programs have been terminated due to the lack of scientific progress and lack of prospects for ultimate commercialization. Because of the uncertainties associated with research and development of these programs, we may not be successful in achieving commercialization. As such, the ultimate timeline and costs to commercialize a product cannot be accurately estimated.

Our product candidates have not yet achieved FDA regulatory approval, which is required before we can market them as therapeutic products in the United States. In order to proceed to subsequent clinical trial stages and to ultimately achieve regulatory approval, the FDA must conclude that our clinical data establish safety and efficacy. We must satisfy the requirements of similar regulatory authorities in foreign countries in order to market products in those countries. The results from preclinical testing and early clinical trials may not be predictive of results in later clinical trials. It is possible for a candidate to show promising results in clinical trials, but subsequently fail to establish sufficient safety and efficacy data necessary to obtain regulatory approvals.

As a result of the uncertainties discussed above, among others, the duration and completion costs of our research and development projects are difficult to estimate and are subject to considerable variation. Our inability to complete our research and development projects in a timely manner or our failure to enter into collaborative agreements, when appropriate, could significantly increase our capital requirements and could adversely impact our liquidity. These uncertainties could force us to seek additional, external sources of financing from time to time in order to continue with our business strategy. Our inability to raise additional capital, or to do so on terms reasonably acceptable to us, would jeopardize the future success of our business.”

However, the Company agrees with the Staff that the presentation of this information should be adjacent to the research and development cost discussion. To more directly address subsections b. through e. of the Staff's comment, the Company proposes to present this information contiguously in its future filings with the SEC, where applicable.

Notes to Consolidated Financial Statements

Note 1. Organization and Summary of Significant Accounting Policies

Restructuring, page 55

3. *We note that you classified $2.1 million and $4.9 million of restructuring charges as research and development expense in 2009 and 2007, respectively. Please tell us how these activities meet the definition of research and development per ASC 730-10-20.*

Response: The Company acknowledges the Staff's comment and respectfully submits that the restructuring charges identified in the Staff's comment represent severance payments paid to former employees of the Company who were engaged in research and development activities, whose salary, prior to the termination of their employment, had been classified by the Company as research and development expenses. Accounting Standards Codification ("***ASC***") 730-10-25-2 "Accounting for Research and Development Costs" ("***ASC 730-10-25-2***") provides that "salaries, wages, and other costs of personnel engaged in research and development activities shall be included in research and development costs." In accordance with ASC 730-10-25-2, the Company determined that the severance payments identified as restructuring charges in the 10-K, which were determined to be "costs of personnel engaged in research and development activities," should continue to be classified as research and development expenses per ASC 730-10-20. The presentation of such charges in this manner is also consistent with the Company's historical practice and complies with the guidance provided in SEC Staff Accounting Bulletin Topic 5.P.3 "Miscellaneous Accounting – Income Statement Presentation of Restructuring Charges," which indicates that the proper classification of a restructuring charge depends on the nature of the charge and "the assets and operations to which it relates. Therefore, charges which relate to activities for which the revenues and expense have historically been included in operating income should generally be classified as an operating expense, separately disclosed if material."

Based on oral discussions with the Staff, the Company understands that the Staff is concerned that readers will assume that future research and development expenses may be larger than they truly are due to the inclusion of personnel restructuring expenses in research and development. The Company believes that disclosures contained within the 10-K clearly identify the amount of restructuring costs included within the research and development expense line. Specifically, the Company directs the Staff's attention to the separate disclosures contained on page 38 and page 39 of the 10-K, in which the Company highlights to the reader that $2.1 million and $4.9 million of restructuring charges comprised of "salary continuation, outplacement services, and other miscellaneous costs" recorded in 2009 and 2007, respectively, were included in research and development expense for such years. Similar disclosure was contained on page 55 and 56 of the 10-K. In addition, the Company disclosed on page 37 and page 38 of the 10-K that (i) its research and development expenses have decreased year-over-year since 2007 and (ii) the Company expects its research and development expenses to continue to decrease during 2010.

Form 10-Q for the Period Ended June 30, 2010

Item 1. Financial Statements

Notes to the Condensed Consolidated Financial Statements

11. Significant Collaborative Research and Development Agreements, page 11

4. *Please provide us draft disclosure to be included in your next Form 10-Q to include a description of all of your rights and obligations, the collaborative development period and all deliverables under your agreement with Abbott International Luxembourg S.ar.l. This comment also applies to the agreement with Boehringer Ingelheim International GmbH.*

Response: The Company acknowledges the Staff's comment and directs the Staff to ASC 808-10-50-1 "Collaborative Arrangements" ("***ASC 808-10-50-1***"), which the Company believes sets forth the requirements for disclosure regarding its collaborative agreements in the notes to its financial statements. ASC 808-10-50-1 requires a participant to a collaboration agreement to disclose 1) information about the nature and purpose of its collaborative arrangements, 2) its rights and obligations under the collaborative arrangements, 3) the accounting policy for collaborative arrangements in accordance with Topic 235, and 4) the income statement classification and amounts attributable to transactions arising from the collaborative arrangement between participants for each period an income statement is presented. The Company respectfully submits that the Company's existing disclosures contained in the 10-Q in the Notes to the Condensed Consolidated Financial Statements under the heading "11. Significant Collaborative Research and Development Agreements" and under the heading "15. Revenue Recognition" sufficiently address the requirements of ASC 808-10-50-1 and U.S. generally accepted accounting principles. Furthermore, the Company has filed copies of such collaboration agreements with the SEC, such that they may be accessed by investors interested in reviewing such agreements in more detail.

However, the Company agrees that its disclosure could be enhanced by combining the two distinct footnotes into a single footnote to aid the reader in the review of the Company's financial statements. Accordingly, the Company proposes to address the Staff's comment by providing text in substantially the form below in its next Form 10-Q and in its other future filings with the SEC, where applicable.

"In June 2010, the Company announced an exclusive worldwide collaboration with Abbott International Luxembourg S.à r.l. (Abbott) to develop and commercialize elagolix and all next-generation gonadtropin-releasing hormone (GnRH) antagonists (collectively "GnRH Compounds") for women's and men's health. Abbott made an upfront payment of $75 million and agreed to make additional development, regulatory and commercial milestone payments of up to approximately $530 million. Under the terms of the agreement, Abbott is responsible for all third-party development, marketing and commercialization costs. The Company will receive funding for certain internal collaboration expenses which includes reimbursement from Abbott for internal and external expenses related to the GnRH Compounds, which reimbursement includes up to approximately $24 million in personnel funding through the end of 2012. The Company will be entitled to a percentage of worldwide sales of GnRH Compounds for the longer of 10 years or the life of the related patent rights. Abbott may terminate the collaboration at its discretion upon 180-days written notice to the Company. In such event, the Company would be entitled to specified payments for ongoing clinical development and related activities and all GnRH Compound product rights would revert to the Company. As of June 30, 2010, the Company had recorded revenues of $2.4 million in amortization of up-front license fees and $1.2 million in sponsored development. In addition, at June 30, 2010 the Company had $72.6 million of deferred revenue related to the Abbott agreement, which is being amortized over the collaborative development period.

Also in June 2010, the Company announced a worldwide collaboration with Boehringer Ingelheim International GmbH (Boehringer Ingelheim) to research, develop and commercialize small molecule GPR119 agonists for the treatment of Type II diabetes and other indications. Under the terms of the agreement, the Company and Boehringer Ingelheim will work jointly to identify and advance GPR119 agonist candidates into pre-clinical development. Boehringer Ingelheim will then be responsible for the global development and commercialization of potential GPR119 agonist products. The Company will receive a $10 million upfront payment, research funding to support discovery efforts and is eligible to receive up to approximately $225 million in development, regulatory and commercial milestone payments. The Company will be entitled to a percentage of any future worldwide sales of GPR119 agonists. Boehringer Ingelheim may terminate the agreement at its discretion upon prior written notice to the Company. In such event, the Company may be entitled to specified payments and all product rights would revert to the Company. As of June 30, 2010, the Company had recorded revenues of $0.2 million in amortization of up-front license fees and $0.1 million in sponsored research. At June 30, 2010, the Company had $9.8 million of deferred license fees that will be amortized over the remaining term of the collaborative research period of the agreement.

Revenues under collaborative research agreements and grants are recognized as research costs are incurred over the period specified in the related agreement or as the services are performed. These agreements are on a best-efforts basis, do not require scientific achievement as a performance obligation and provide for payment to be made when costs are incurred or the services are performed. All fees are nonrefundable to the collaborators. Upfront, nonrefundable payments for license fees, grants, and advance payments for sponsored research revenues received in excess of amounts earned are classified as deferred revenue and recognized as income over the contract or development period. Estimating the duration of the development period includes continual assessment of development stages and regulatory requirements. Milestone payments are recognized as revenue upon achievement of pre-defined scientific events, which require substantive effort, and for which achievement of the milestone was not readily assured at the inception of the agreement."

Definitive Proxy Statement on Schedule 14A

Compensation Discussion and Analysis

Equity Awards, page 31

5. *Please provide us draft disclosure to be included in an amendment to your December 31, 2009 Form 10-K that expands your discussion to include a more detailed analysis of how the Compensation Committee determined the actual amounts of the equity awards for each named executive officer. Although we note disclosure regarding general policies relating to these forms of compensation, please include disclosure that not only sets forth the actual amounts awarded under these forms of compensation but also provides substantive analysis and insight into how the Compensation Committee determined the actual award amounts. For example, please discuss and analyze how the Compensation Committee determined to award the actual number of shares underlying the stock option and restricted stock awards for your named executive officers, and the rationale for the variances in those awards among such officers. In particular, please elaborate on the Compensation Committee's assessment of each executive's individual performance and his contribution to the Company's long-term strategic goals as this pertained to the executive's individual equity awards.*

Response: The Company acknowledges the Staff's comment and advises the Staff that, for 2009, the Company's Board of Directors approved no equity awards to the Company's executive officers. A discussion of the Company's determination to grant no equity awards to the Company's executive officers for 2009, along with a brief narrative explaining this decision, was provided in the Proxy Statement on page 33 under the heading "Cash Bonuses and Equity Awards." Due to the fact that no equity awards were granted to the Company's executive officers for 2009, the Company respectfully submits that a more detailed analysis of how the Company's Board of Directors determined the actual amounts of the equity awards granted to each Named Executive Officer is inapplicable. Notwithstanding the foregoing, the Company commits that, to the extent applicable, it will provide disclosure responsive to the Staff's comment in future filings with the SEC.

Summary Compensation Table, page 35

6. *We note that you have displayed compensation information for only two years for three of your Named Executive Officers and that you state in footnote 1 that these executive officers were named to their current positions as such in January 2008. However, we note that, per your disclosure beginning on page 26, each of these executive officers was in their current positions as of January 2007. In addition, we note your current report on Form 8-K that was filed December 22, 2006 announcing that on December 21, 2006 these men were promoted to their current positions. Please provide us draft disclosure to be included in an amendment to your December 31, 2009 Form 10-K to revise your compensation table to provide the required fiscal year 2007 information for each of these NEOs.*

Response: The Company acknowledges the Staff's comment and respectfully submits that, while Christopher F. O'Brien, Dimitri E. Grigoriadis and Haig P. Bozigian were promoted to their current positions in December 2006, they were not appointed as executive officers within the definition set forth in Rule 3b-7 of the Securities Exchange Act of 1934, as amended (the "***Exchange Act***"), until January 2008 due to the Company's determination that between December 2006 and January 2008, none of Drs. O'Brien, Grigoriadis or Bozigian performed a policy making function within the Company or was in charge of a principal business unit, division or function within the scope of Rule 3b-7 of the Exchange Act. In determining the Company's executive officers for 2007, the Company determined that all policy making functions were performed by the Company's President and Chief Executive Officer, Chief Financial Officer, Chief Operating Officer, Chief Administrative Officer and General Counsel, and that these same individuals were in charge of all of the Company's principal business units. At that time, each of Drs. O'Brien, Grigoriadis and Bozigian reported to Kevin Gorman, who was then serving as the Company's Chief Operating Officer. As a result, none of Drs. O'Brien, Grigoriadis or Bozigian served as executive officers in 2007 and such individuals' compensation for 2007 was not included in the compensation disclosure in the Proxy Statement pursuant to Item 402(a)(3) of Regulation S-K.

In January 2008, the Company appointed Dr. Gorman as its President and Chief Executive Officer following the resignation of Gary Lyons from such offices, and engaged in a restructuring of the Company's executive management team, pursuant to which the responsibilities of Drs. O'Brien, Grigoriadis and Bozigian were increased whereby each of them was given a policy making function or was put in charge of a principal business unit, division or function. As a result, the Company appointed Drs. O'Brien, Grigoriadis and Bozigian at such time as executive officers within the definition set forth in Rule 3b-7 of the Exchange Act, and has provided compensation disclosure for such individuals for 2008 and 2009 in the Proxy Statement pursuant to Item 402(a)(3) of Regulation S-K.

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The Company further acknowledges that:

- the Company is responsible for the adequacy and accuracy of the disclosure in the filings;
- Staff comments or changes to disclosure in response to Staff comments do not foreclose the SEC from taking any action with respect to the filings; and
- the Company may not assert Staff comments as a defense in any proceeding initiated by the SEC or any person under the federal securities laws of the United States.

Please contact me at (858) 617-7600 with any questions or further comments regarding the Company's responses to the Staff's comments.

Sincerely,

/s/ Kevin C. Gorman

Kevin C. Gorman
President and Chief Executive Officer

cc: Jason L. Kent, Esq. of Cooley LLP