

**UNITED STATES
SECURITIES AND EXCHANGE
COMMISSION**

Washington, D.C. 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934
(Amendment No. 1)*

NEUROCRINE BIOSCIENCES INC.

(Name of Issuer)

COMMON STOCK

(Title of Class of Securities)

64125C109

(CUSIP Number)

DECEMBER 31, 2006

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
- Rule 13d-1(c)
- Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP No. 64125C109

1. Names of Reporting Persons. I.R.S. Identification Nos. of above persons (entities only)
Sectoral Asset Management Inc.

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization
Canada

Number of
Shares
Beneficially
Owned by
Each

5. Sole Voting Power
-0-

Reporting
Person With

6. Shared Voting Power
-0-
-
7. Sole Dispositive Power
-0-
-
8. Shared Dispositive Power
-0-
-

9. Aggregate Amount Beneficially Owned by Each Reporting Person
-0-

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)
-0-

12. Type of Reporting Person (See Instructions)
IA

CUSIP No. 64125C109

1. Names of Reporting Persons. I.R.S. Identification Nos. of above persons (entities only)
Jérôme G. Pfund

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization
Swiss

5. Sole Voting Power
-0-

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

6. Shared Voting Power
-0-

7. Sole Dispositive Power
-0-

8. Shared Dispositive Power
-0-

9. Aggregate Amount Beneficially Owned by Each Reporting Person
-0-

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)
-0-

12. Type of Reporting Person (See Instructions)
IN

CUSIP No. 64125C109

1. Names of Reporting Persons. I.R.S. Identification Nos. of above persons (entities only)
Michael L. Sjöström

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization
Swiss

5. Sole Voting Power
-0-

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

6. Shared Voting Power
-0-

7. Sole Dispositive Power
-0-

8. Shared Dispositive Power
-0-

9. Aggregate Amount Beneficially Owned by Each Reporting Person
-0-

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)
-0-

12. Type of Reporting Person (See Instructions)
IN

Item 1.

- (a) Name of Issuer
Neurocrine Biosciences Inc.
-
- (b) Address of Issuer's Principal Executive Offices
12790 El Camino Real, San Diego, CA 92130 USA
-

Item 2.

- (a) Name of Person Filing
Sectoral Asset Management Inc.
Jérôme G. Pfund
Michael L. Sjöström
-
- (b) Address of Principal Business Office or, if none, Residence
The principal business address of each person filing is:
2120-1000 Sherbrooke St. West Montreal PQ H3A 3G4 Canada
-
- (c) Citizenship
Sectoral Asset Management Inc. is a Canadian corporation
Jérôme G. Pfund is a Swiss citizen
Michael L. Sjöström is a Swiss citizen
-
- (d) Title of Class of Securities
Common Stock
-
- (e) CUSIP Number
64125C109
-

Item 3. If this statement is filed pursuant to §§240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

- (a) Broker or dealer registered under section 15 of the Act (15 U.S.C. 78o).
- (b) Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c).
- (c) Insurance company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c).
- (d) Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8).
- (e) An investment adviser in accordance with §240.13d-1(b)(1)(ii)(E);
- (f) An employee benefit plan or endowment fund in accordance with §240.13d-1(b)(1)(ii)(F);
- (g) A parent holding company or control person in accordance with § 240.13d-1(b)(1)(ii)(G);
- (h) A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
- (i) A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);
- (j) Group, in accordance with §240.13d-1(b)(1)(ii)(J).

Item 4. Ownership

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

Sectoral Asset Management Inc, in its capacity as an investment adviser, has the sole right to dispose of or vote the number of shares of common stock of the Issuer set forth in this filing. Jérôme G. Pfund and Michael L. Sjöström are the sole shareholders of Sectoral Asset Management Inc. Sectoral Asset Management, Inc. and Messrs. Pfund and Sjöström disclaim beneficial ownership of the Issuer's common stock held by Sectoral Asset Management Inc.

(a) Amount beneficially owned:
Sectoral Asset Management Inc.: -0- shares
Jérôme G. Pfund: -0- shares
Michael L. Sjöström: -0- shares

(b) Percent of class:
Sectoral Asset Management Inc.: -0- shares
Jérôme G. Pfund: -0- shares
Michael L. Sjöström: -0- shares

(c) Number of shares as to which the person has:

(i) Sole power to vote or to direct the vote
Sectoral Asset Management Inc.: -0- shares
Jérôme G. Pfund: -0- shares
Michael L. Sjöström: -0- shares

(ii) Shared power to vote or to direct the vote
Sectoral Asset Management Inc.: -0- shares
Jérôme G. Pfund: -0- shares
Michael L. Sjöström: -0- shares

(iii) Sole power to dispose or to direct the disposition of
Sectoral Asset Management Inc.: -0- shares
Jérôme G. Pfund: -0- shares
Michael L. Sjöström: -0- shares

(iv) Shared power to dispose or to direct the disposition of
Not applicable.

Item 5. Ownership of Five Percent or Less of a Class

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following .

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Item 6. Ownership of More than Five Percent on Behalf of Another Person

Various persons, as investment advisory clients of Sectoral Asset Management, Inc., have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the common stock of the Issuer. To the knowledge of Sectoral Asset Management, Inc., no one such person's interest in the common stock of the Issuer is more than five percent of the total outstanding common stock of the Issuer.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person

Not applicable.

Item 8. Identification and Classification of Members of the Group

Not applicable.

Item 9. Notice of Dissolution of Group

Not applicable.

Item 10. Certification

By signing below the undersigned each certifies that, to the best knowledge and belief of the undersigned, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing

or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURE

After reasonable inquiry and to the best knowledge and belief of each of the undersigned, the undersigned certify that the information set forth in this statement is true, complete and correct.

Dated: February 2, 2007

SECTORAL ASSET MANAGEMENT INC.

/s/Jérôme G. Pfund
By: Jérôme G. Pfund
Its: CEO

Dated: February 2, 2007

/s/Jérôme G. Pfund
Jérôme G. Pfund

Dated: February 2, 2007

/s/Michael L. Sjöström
Michael L. Sjöström

Exhibit A

AGREEMENT

Each of the undersigned, pursuant to Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, hereby agrees that only one statement containing the information required by Schedule 13G needs be filed with respect to the ownership by each of the undersigned of the shares of common stock of Neurocrine Biosciences Inc. and that the Schedule 13G to which this Agreement is appended as Exhibit A is to be filed with the Securities and Exchange Commission on behalf of each of the undersigned on or about the date hereof.

EXECUTED as a sealed instrument this 2nd day of February 2007.

SECTORAL ASSET MANAGEMENT INC.

/s/Jérôme G. Pfund
By: Jérôme G. Pfund
Its: CEO

/s/Jérôme G. Pfund
Jérôme G. Pfund

/s/Michael L. Sjöström
Michael L. Sjöström