

Flynn James E
Form SC 13G/A
February 12, 2010

SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

SCHEDULE 13G
(Rule 13d-102)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT
TO RULES 13d-1(b)(c), AND (d) AND AMENDMENTS THERETO FILED
PURSUANT TO RULE 13d-2(b)

(Amendment No. 5) *

ARENA PHARMACEUTICALS, INC.

(Name of Issuer)

Common Stock

(Title of Class of Securities)

040047102

(CUSIP Number)

December 31, 2009

(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)

(Page 1 of 16 Pages)

* 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.

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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 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).

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Capital, L.P.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) (b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5. SOLE VOTING POWER

0

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

6. SHARED VOTING POWER

18,455,360*

7. SOLE DISPOSITIVE VOTING POWER

0

8. SHARED DISPOSITIVE VOTING POWER

18,455,360*

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

18,455,360*

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

9.98%

12. TYPE OF REPORTING PERSON*

PN

* Comprised of 18,455,360 warrants held by Deerfield Partners, L.P., Deerfield Special Situations Fund, L.P., Deerfield Private Design Fund, L.P. and Deerfield Private Design International, L.P. The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or entities with which such holder would constitute a

Section 13(d) “group” would exceed 9.98% of the total number of shares of the Issuer then outstanding (the “Ownership Cap”). Accordingly, notwithstanding the number of shares reported, the reporting person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Partners, L.P.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) (b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5. SOLE VOTING POWER

0

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

6. SHARED VOTING POWER

5,544,000* (Comprised of Warrants)

7. SOLE DISPOSITIVE VOTING POWER

0

8. SHARED DISPOSITIVE VOTING POWER

5,544,000* (Comprised of Warrants)

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

5,544,000* (Comprised of Warrants)

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

5.64%

12. TYPE OF REPORTING PERSON*

PN

* The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) "group" would exceed 9.98% of the total number of shares of the Issuer then outstanding (the "Ownership Cap"). Accordingly, notwithstanding the number of shares reported, the reporting

person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Special Situations Fund, L.P.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) (b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5. SOLE VOTING POWER

0

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

6. SHARED VOTING POWER

591,360* (Comprised of Warrants)

7. SOLE DISPOSITIVE VOTING POWER

0

8. SHARED DISPOSITIVE VOTING POWER

591,360* (Comprised of Warrants)

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

591,360* (Comprised of Warrants)

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

9.98%

12. TYPE OF REPORTING PERSON*

PN

* The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) "group" would exceed 9.98% of the total number of shares of the Issuer then outstanding (the "Ownership Cap"). Accordingly, notwithstanding the number of shares reported, the reporting

person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

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1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Management Company, L.P.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) (b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

New York

5. SOLE VOTING POWER

0

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

6. SHARED VOTING POWER

9,544,640*

7. SOLE DISPOSITIVE VOTING POWER

0

8. SHARED DISPOSITIVE VOTING POWER

9,544,640*

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9,544,640*

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

9.33%

12. TYPE OF REPORTING PERSON*

CO

* Comprised of 9,544,640 warrants held by Deerfield International Limited and Deerfield Special Situations Fund International Limited. The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or

entities with which such holder would constitute a Section 13(d) “group” would exceed 9.98% of the total number of shares of the Issuer then outstanding (the “Ownership Cap”). Accordingly, notwithstanding the number of shares reported, the reporting person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

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1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield International Limited
2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) (b)
3. SEC USE ONLY
4. CITIZENSHIP OR PLACE OF ORGANIZATION

British Virgin Islands
5. SOLE VOTING POWER

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH 0
6. SHARED VOTING POWER

8,456,000* (Comprised of Warrants)
7. SOLE DISPOSITIVE VOTING POWER

0
8. SHARED DISPOSITIVE VOTING POWER

8,456,000* (Comprised of Warrants)
9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

8,456,000* (Comprised of Warrants)
10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*
11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

8.36%
12. TYPE OF REPORTING PERSON*

CO

* The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares that are beneficially owned by such holder and its affiliates and any other persons or entities which with which such holder would constitute a Section 13(d) "group", would exceed 9.98% of the total number of shares of

the Issuer's total outstanding.

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1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Special Situations Fund International Limited

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) (b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

British Virgin Islands

5. SOLE VOTING POWER

0

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

6. SHARED VOTING POWER

1,088,640* (Comprised of Warrants)

7. SOLE DISPOSITIVE VOTING POWER

0

8. SHARED DISPOSITIVE VOTING POWER

1,088,640* (Comprised of Warrants)

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,088,640* (Comprised of Warrants)

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

9.98%

12. TYPE OF REPORTING PERSON*

CO

* The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) "group" would exceed 9.98% of the total number of shares of the Issuer then outstanding (the "Ownership Cap"). Accordingly, notwithstanding the number of shares reported, the reporting

person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

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1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Private Design Fund, L.P.
2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) (b)
3. SEC USE ONLY
4. CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware
5. SOLE VOTING POWER

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH 0
6. SHARED VOTING POWER

4,718,560* (Comprised of Warrants)
7. SOLE DISPOSITIVE VOTING POWER

0
8. SHARED DISPOSITIVE VOTING POWER

4,718,560* (Comprised of Warrants)
9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

4,718,560* (Comprised of Warrants)
10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*
11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

4.84%
12. TYPE OF REPORTING PERSON*

CO

* The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) "group" would exceed 9.98% of the total number of shares of the Issuer

then outstanding (the "Ownership Cap"). Accordingly, notwithstanding the number of shares reported, the reporting person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

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1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Private Design International, L.P.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) (b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

British Virgin Islands

5. SOLE VOTING POWER

0

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

6. SHARED VOTING POWER

7,601,440* (Comprised of Warrants)

7. SOLE DISPOSITIVE VOTING POWER

0

8. SHARED DISPOSITIVE VOTING POWER

7,601,440* (Comprised of Warrants)

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

7,601,440* (Comprised of Warrants)

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

7.58%

12. TYPE OF REPORTING PERSON*

CO

* The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) "group" would exceed 9.98% of the total number of shares of the Issuer then outstanding (the "Ownership Cap"). Accordingly, notwithstanding the number of shares reported, the reporting

person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

James E. Flynn

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) (b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

United States

5. SOLE VOTING POWER

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

6. SHARED VOTING POWER

28,000,000*

7. SOLE DISPOSITIVE VOTING POWER

8. SHARED DISPOSITIVE VOTING POWER

28,000,000*

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

28,000,000*

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

9.98%*

12. TYPE OF REPORTING PERSON*

IN

* Comprised of warrants held by Deerfield Partners, L.P., Deerfield Special Situations Fund, L.P., Deerfield Special Situations Fund International Limited, Deerfield International Limited Deerfield Private Design Fund, L.P. and Deerfield Private Design International, L.P. The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares that are beneficially owned by such holder and its affiliates

and any other persons or entities which with which such holder would constitute a Section 13(d) “group”, would exceed 9.98% of the total number of shares of the Issuer’s total outstanding (the “Ownership Cap”). Accordingly, notwithstanding the total number of shares reported, the reporting person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

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Item
1(a). Name of Issuer:

ARENA PHARMACEUTICALS, INC.

Item
1(b). Address of Issuer's Principal Executive Offices:

6166 Nancy Ridge Drive
San Diego, California 92121

Item
2(a). Name of Person Filing:

James E. Flynn, Deerfield Capital, L.P., Deerfield Partners, L.P.,
Deerfield Special Situations Fund, L.P., Deerfield Management
Company, L.P., Deerfield International Limited, Deerfield Special
Situations Fund International Limited, Deerfield Private Design Fund, L.P., and
Deerfield Private Design International, L.P.

Item
2(b). Address of Principal Business Office, or if None, Residence:

James E. Flynn, Deerfield Capital, L.P., Deerfield Partners, L.P.
Deerfield Special Situations Fund, L.P., Deerfield Management
Company, L.P., Deerfield Private Design Fund, L.P., and Deerfield Private Design
International, L.P. 780 Third Avenue, 37th Floor, New York, NY 10017
Deerfield International Limited, Deerfield Special Situations
Fund International Limited c/o Bisys Management, Bison Court,
Columbus Centre, P.O. Box 3460, Road Town, Tortola, British Virgin Islands

Item
2(c). Citizenship:

Mr. Flynn - United States citizen
Deerfield Capital, L.P., Deerfield Partners, L.P., Deerfield
Special Situations Fund, L.P. and Deerfield Private Design Fund, L.P.
- Delaware limited partnerships
Deerfield Management Company, L.P. - New York limited partnership
Deerfield International Limited, Deerfield Special Situations
Fund International Limited and Deerfield Private Design International, L.P.
- British Virgin Islands corporations

Item
2(d). Title of Class of Securities:

Common Stock

Item
2(e). CUSIP Number:

040047102

Item 3. If This Statement is Filed Pursuant to Rule 13d-1(b), or 13d-2(b) or (c), Check Whether the Person Filing is a:

- (a) Broker or dealer registered under Section 15 of the Exchange Act.
 - (b) Bank as defined in Section 3(a)(6) of the Exchange Act.
 - (c) Insurance company as defined in Section 3(a)(19) of the Exchange Act.
 - (d) Investment company registered under Section 8 of the Investment Company Act.
 - (e) An investment adviser in accordance with Rule 13d-1(b)(1)(ii)(E);
 - (f) An employee benefit plan or endowment fund in accordance with Rule 13d-1(b)(1)(ii)(F);
-

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- (g) o A parent holding company or control person in accordance with Rule 13d-1(b)(1)(ii)(G);
- (h) o A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act;
- (i) o A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act;
- (j) o Group, in accordance with Rule 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.

- (a) Amount beneficially owned:
 - Deerfield Capital, L.P. – 18,455,360¹
 - Deerfield Partners, L.P. – 5,544,000³ (Comprised of Warrants)
 - Deerfield Special Situations Fund, L.P. – 591,360³ (Comprised of Warrants)
 - Deerfield Management Company, L.P. – 9,544,640²
 - Deerfield International Limited – 8,456,000³ (Comprised of Warrants)
 - Deerfield Special Situations Fund International Limited – 1,088,640³ (Comprised of Warrants)
 - Deerfield Private Design Fund, L.P. – 4,718,560³ (Comprised of Warrants)
 - Deerfield Private Design International, L.P. – 7,601,440³ (Comprised of Warrants)
 - James E. Flynn – 28,000,000⁴
- (b) Percent of class:
 - Deerfield Capital, L.P. – 9.98%
 - Deerfield Partners, L.P. – 5.64%
 - Deerfield Special Situations Fund, L.P. - .63%
 - Deerfield Management Company, L.P. – 9.33%
 - Deerfield International Limited – 8.36%
 - Deerfield Special Situations Fund International Limited - 9.98%
 - Deerfield Private Design Fund, L.P. – 4.84%
 - Deerfield Private Design International Limited – 7.58%
 - James E. Flynn – 9.98%

¹ Comprised of 18,455,360 warrants held by Deerfield Partners, L.P., Deerfield Special Situations Fund, L.P., Deerfield Private Design Fund, L.P. and Deerfield Private Design International, L.P. The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) “group” would exceed 9.98% of the total number of shares of the Issuer then outstanding (the “Ownership Cap”). Accordingly, notwithstanding the number of shares reported, the reporting person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

² Comprised of 9,544,640 warrants held by Deerfield International Limited and Deerfield Special Situations Fund International Limited. The provisions of such warrants restrict the exercise of such warrants to the extent that, upon

such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) “group” would exceed 9.98% of the total number of shares of the Issuer then outstanding (the “Ownership Cap”). Accordingly, notwithstanding the number of shares reported, the reporting person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

3 The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares that are beneficially owned by such holder and its affiliates and any other persons or entities which with which such holder would constitute a Section 13(d) “group”, would exceed 9.98% of the total number of shares of the Issuer’s total outstanding

4 Comprised of warrants held by Deerfield Partners, L.P., Deerfield Special Situations Fund, Deerfield Special Situations Fund International Limited, Deerfield International Limited, Deerfield Private Design Fund, L.P. and Deerfield Private Design International, L.P. The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares that are beneficially owned by such holder and its affiliates and any other persons or entities which with which such holder would constitute a Section 13(d) “group”, would exceed 9.98% of the total number of shares of the Issuer’s total outstanding.

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(c)	Number of shares as to which such person has:	
(i)	Sole power to vote or to direct the vote	All Reporting Persons - 0
(ii)	Shared power to vote or to direct the vote	Deerfield Capital, L.P. – 18,455,360 ¹ Deerfield Partners, L.P. – 5,544,000 ³ (Comprised of Warrants) Deerfield Special Situations Fund, L.P. – 591,360 ³ (Comprised of Warrants) Deerfield Management Company, L.P. – 9,544,640 ² Deerfield International Limited – 8,456,000 ³ (Comprised of Warrants) Deerfield Special Situations Fund International Limited – 1,088,640 ³ (Comprised of Warrants) Deerfield Private Design Fund, L.P. – 4,718,560 ³ (comprised of Warrants) Deerfield Private Design International, L.P. – 7,601,440 ³ (comprised of Warrants) James E. Flynn – 28,000,000 ⁴
	(iii) Sole power to dispose or to direct the disposition of	All Reporting Persons - 0
	(iv) Shared power to dispose or to direct the disposition of	Deerfield Capital, L.P. – 18,455,360 ¹ Deerfield Partners, L.P. – 5,544,000 ³ (Comprised of Warrants) Deerfield Special Situations Fund, L.P. – 591,360 ³ (Comprised of Warrants) Deerfield Management Company, L.P. – 9,544,640 ² Deerfield International Limited – 8,456,000 ³ (Comprised of Warrants) Deerfield Special Situations Fund International Limited – 1,088,640 ³ (Comprised of Warrants) Deerfield Private Design Fund, L.P. – 4,718,560 ³ (comprised of Warrants) Deerfield Private Design International, L.P. – 7,601,440 ³ (comprised of Warrants) James E. Flynn – 28,000,000 ⁴

¹ Comprised of 18,455,360 warrants held by Deerfield Partners, L.P., Deerfield Special Situations Fund, L.P., Deerfield Private Design Fund, L.P. and Deerfield Private Design International, L.P. The provisions of such warrants

restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) "group" would exceed 9.98% of the total number of shares of the Issuer then outstanding (the "Ownership Cap"). Accordingly, notwithstanding the number of shares reported, the reporting person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

2 Comprised of 9,544,640 warrants held by Deerfield International Limited and Deerfield Special Situations Fund International Limited. The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares then beneficially owned by the holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) "group" would exceed 9.98% of the total number of shares of the Issuer then outstanding (the "Ownership Cap"). Accordingly, notwithstanding the number of shares reported, the reporting person disclaims beneficial ownership of the shares underlying such warrants to the extent beneficial ownership of such shares would cause all reporting persons hereunder, in the aggregate, to exceed the Ownership Cap.

3 The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares that are beneficially owned by such holder and its affiliates and any other persons or entities which with which such holder would constitute a Section 13(d) "group", would exceed 9.98% of the total number of shares of the Issuer's total outstanding

44 Comprised of warrants held by Deerfield Partners, L.P., Deerfield Special Situations Fund, Deerfield Special Situations Fund International Limited, Deerfield International Limited, Deerfield Private Design Fund, L.P. and Deerfield Private Design International, L.P. The provisions of such warrants restrict the exercise of such warrants to the extent that, upon such exercise, the number of shares that are beneficially owned by such holder and its affiliates and any other persons or entities which with which such holder would constitute a Section 13(d) "group", would exceed 9.98% of the total number of shares of the Issuer's total outstanding.

CUSIP No. 040047102 13G

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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 o.

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

If any other person is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, such securities, a statement to that effect should be included in response to this item and, if such interest relates to more than five percent of the class, such person should be identified. A listing of the shareholders of an investment company registered under the Investment Company Act of 1940 or the beneficiaries of employee benefit plan, pension fund or endowment fund is not required.

N/A

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

If a parent holding company or Control person has filed this schedule, pursuant to Rule 13d-1(b)(1)(ii)(G), so indicate under Item 3(g) and attach an exhibit stating the identity and the Item 3 classification of the relevant subsidiary. If a parent holding company or control person has filed this schedule pursuant to Rule 13d-1(c) or Rule 13d-1(d), attach an exhibit stating the identification of the relevant subsidiary.

N/A

Item 8. Identification and Classification of Members of the Group.

If a group has filed this schedule pursuant to ss.240.13d-1(b)(1)(ii)(J), so indicate under Item 3(j) and attach an exhibit stating the identity and Item 3 classification of each member of the group. If a group has filed this schedule pursuant to ss.240.13d-1(c) or ss.240.13d-1(d), attach an exhibit stating the identity of each member of the group.

See Exhibit B

Item 9. Notice of Dissolution of Group.

Notice of dissolution of a group may be furnished as an exhibit stating the date of the dissolution and that all further filings with respect to transactions in the security reported on will be filed, if required, by members of the group, in their individual capacity. See Item 5.

N/A

Item 10. Certifications.

"By signing below I certify that, to the best of my knowledge and belief, the securities referred to above 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 such purpose or effect."

CUSIP No. 040047102 13G

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SIGNATURE

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

DEERFIELD CAPITAL, L.P.

By: J.E. Flynn Capital LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD PARTNERS, L.P.

By: Deerfield Capital, L.P.

By: J.E. Flynn Capital LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD SPECIAL SITUATIONS FUND, L.P.

By: Deerfield Capital, L.P.

By: J.E. Flynn Capital LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD PRIVATE DESIGN FUND, L.P.

By: Deerfield Capital, L.P.

By: J.E. Flynn Capital LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD PRIVATE DESIGN INTERNATIONAL, L.P.

By: Deerfield Capital, L.P.

By: J.E. Flynn Capital LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD MANAGEMENT COMPANY, L.P.

By: Flynn Management LLC
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

CUSIP No. 040047102 13G

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DEERFIELD INTERNATIONAL LIMITED

By: Deerfield Management Company

By: Flynn Management LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD SPECIAL SITUATIONS FUND INTERNATIONAL LIMITED

By: Deerfield Management Company

By: Flynn Management LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

JAMES E. FLYNN

/s/ Darren Levine
Darren Levine, Attorney-In-Fact

Date: February 12, 2010

Exhibit List

Exhibit A. Joint Filing Agreement.

Exhibit B. Item 8 Statement.

Exhibit C (1). Power of Attorney.

(1) Previously filed as Exhibit 24 to a Form 4 with regard to Dynavax Technologies Corporation filed with the Securities and Commission on July 20, 2007 by Deerfield Capital L.P.; Deerfield Partners, L.P.; Deerfield Management Company, L.P.; Deerfield International Limited; Deerfield Special Situations Fund, L.P.; Deerfield Special Situations Fund International Limited; Deerfield Private Design Fund, L.P.; Deerfield Private Design International, L.P. and James E. Flynn.

Exhibit A

Agreement

The undersigned agree that this Schedule 13G Amendment, and all further amendments thereto, relating to the Common Stock of Third Wave Technologies, Inc. shall be filed on behalf of the undersigned.

DEERFIELD CAPITAL, L.P.

By: J.E. Flynn Capital LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD PARTNERS, L.P.

By: Deerfield Capital, L.P.

By: J.E. Flynn Capital LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD SPECIAL SITUATIONS FUND, L.P.

By: Deerfield Capital, L.P.

By: J.E. Flynn Capital LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD MANAGEMENT COMPANY, L.P.

By: Flynn Management LLC
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD INTERNATIONAL LIMITED

By: Deerfield Management Company

By: Flynn Management LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD PRIVATE DESIGN FUND, L.P.

By: Deerfield Capital, L.P.

By: J.E. Flynn Capital LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD PRIVATE DESIGN INTERNATIONAL, L.P.

By: Deerfield Capital, L.P.

By: J.E. Flynn Capital LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

DEERFIELD SPECIAL SITUATIONS FUND INTERNATIONAL LIMITED

By: Deerfield Management Company

By: Flynn Management LLC,
General Partner

By: /s/ Darren Levine
Darren Levine, Attorney-In-Fact

JAMES E. FLYNN

/s/ Darren Levine
Darren Levine, Attorney-In-Fact

Exhibit B

Due to the relationships between them, the reporting persons hereunder may be deemed to constitute a “group” with one another for purposes of Section 13(d)(3) of the Securities Exchange Act of 1934.