

OMB APPROVAL	
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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>Flynn James E</u> (Last) (First) (Middle) 780 THIRD AVENUE, 37TH FLOOR (Street) NEW YORK NY 10017 (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>aTYR PHARMA INC [LIFE]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director <input checked="" type="checkbox"/> 10% Owner Officer (give title below) <input checked="" type="checkbox"/> Other (specify below) Possible Member of 10% Group
	3. Date of Earliest Transaction (Month/Day/Year) <u>05/12/2015</u>	
4. If Amendment, Date of Original Filed (Month/Day/Year)		

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	05/12/2015		C		230,764	A	(1)	230,764	I	Through Deerfield Private Design Fund III, L.P. ⁽²⁾⁽³⁾
Common Stock	05/12/2015		C		230,764	A	(1)	230,764	I	Through Deerfield Special Situations Fund, L.P. ⁽²⁾⁽³⁾
Common Stock	05/12/2015		P		25,000	A	\$14	255,764	I	Through Deerfield Private Design Fund III, L.P. ⁽²⁾⁽³⁾
Common Stock	05/12/2015		P		25,000	A	\$14	255,764	I	Through Deerfield Special Situations Fund, L.P. ⁽²⁾⁽³⁾

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Series E Preferred Stock	(1)	05/12/2015		C		2,234,137		(1)	(1)	Common Stock	230,764	(1)	0	I	Through Deerfield Private Design Fund III, L.P. ⁽²⁾⁽³⁾

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Series E Preferred Stock	(I)	05/12/2015		C			2,234,137	(I)	(I)	Common Stock	230,764	(I)	0	I	Through Deerfield Special Situations Fund, L.P.(2)(3)

1. Name and Address of Reporting Person*

[Flynn James E](#)

(Last) (First) (Middle)

780 THIRD AVENUE, 37TH FLOOR

(Street)

NEW YORK NY 10017

(City) (State) (Zip)

1. Name and Address of Reporting Person*

[Deerfield Mgmt L.P.](#)

(Last) (First) (Middle)

780 THIRD AVENUE
37TH FLOOR

(Street)

NEW YORK NY 10017

(City) (State) (Zip)

1. Name and Address of Reporting Person*

[DEERFIELD MANAGEMENT CO](#)

(Last) (First) (Middle)

780 THIRD AVENUE, 37TH FLOOR

(Street)

NEW YORK NY 10017

(City) (State) (Zip)

1. Name and Address of Reporting Person*

[Deerfield Special Situations Fund, L.P.](#)

(Last) (First) (Middle)

780 3RD AVENUE
37TH FLOOR

(Street)

NEW YORK NY 10017

(City) (State) (Zip)

1. Name and Address of Reporting Person *		
Deerfield Mgmt III, L.P.		
(Last)	(First)	(Middle)
780 THIRD AVENUE, 37TH FLOOR		
(Street)		
NEW YORK	NY	10017
(City) (State) (Zip)		
1. Name and Address of Reporting Person *		
Deerfield Private Design Fund III, L.P.		
(Last)	(First)	(Middle)
780 THIRD AVENUE, 37TH FLOOR		
(Street)		
NEW YORK	NY	10017
(City) (State) (Zip)		

Explanation of Responses:

- Shares of Series E Convertible Preferred Stock have no expiration date. Each share of Series E Convertible Preferred Stock automatically converted into .10329 shares of the Issuer's Common Stock upon the closing of the Issuer's initial public offering of Common Stock.
- This Form 4 is being filed by the undersigned as well as the entities listed on the Joint Filer Information Statement attached as an exhibit hereto (the "Reporting Persons"). Deerfield Mgmt III, L.P. is the general partner of Deerfield Private Design Fund III, L.P. ("Fund III") and Deerfield Mgmt, L.P. is the general partner of Deerfield Special Situations Fund, L.P. (together with Fund III, the "Funds"). Deerfield Management Company, L.P. is the investment manager of the Funds. James E. Flynn is the sole member of the general partner of each of Deerfield Mgmt III, L.P., Deerfield Mgmt, L.P. and Deerfield Management Company, L.P.
- In accordance with Instruction 4 (b)(iv) to Form 4, the entire amount of the Issuer's securities held by the Funds is reported herein. For purposes of Section 16 of the Securities Exchange Act of 1934, as amended, each Reporting Person disclaims beneficial ownership of any such securities, except to the extent of his/its indirect pecuniary interest therein, if any, and this report shall not be deemed an admission that such Reporting Person is the beneficial owner of such securities for purposes of Section 16 or otherwise.

Remarks:

Jonathan Isler, Attorney-in-Fact: Power of Attorney, which is hereby incorporated by reference to Exhibit 24 to a Form 3 with regard to Avalanche Biotechnologies, Inc. filed with the Securities and Exchange Commission on July 30, 2014 by Deerfield Mgmt III, L.P., Deerfield Mgmt, L.P., Deerfield Management Company, L.P., Deerfield Special Situations Fund, L.P., Deerfield Special Situations International Master Fund, L.P., Deerfield Private Design Fund III, L.P. and James E. Flynn.

/s/ Jonathan Isler 05/13/2015
 ** Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.

Joint Filer Information

Names: Deerfield Mgmt, L.P., Deerfield Mgmt III, L.P., Deerfield Management Company, L.P., Deerfield Special Situations Fund, L.P. and Deerfield Private Design Fund III, L.P.

Address: 780 Third Avenue, 37th Floor
New York, NY 10017

Designated Filer: James E. Flynn

Issuer and Ticker Symbol: aTyr Pharma, Inc. [LIFE]

Date of Earliest Transaction Required To be Reported: May 12, 2015

The undersigned, Deerfield Mgmt, L.P., Deerfield Mgmt III, L.P., Deerfield Management Company, L.P., Deerfield Special Situations Fund, L.P. and Deerfield Private Design Fund III, L.P. are jointly filing the attached Statement of Changes in Beneficial Ownership on Form 4 with James E. Flynn with respect to the beneficial ownership of securities of aTyr Pharma, Inc.

Signatures:

DEERFIELD MGMT, L.P.
By: J.E. Flynn Capital, LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

DEERFIELD MANAGEMENT COMPANY, L.P.
By: Flynn Management LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

DEERFIELD SPECIAL SITUATIONS FUND, L.P.
By: Deerfield Mgmt, L.P., General Partner
By: J.E. Flynn Capital, LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

DEERFIELD MGMT III, L.P.
By: J.E. Flynn Capital III, LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

DEERFIELD PRIVATE DESIGN FUND III, L.P.
By: Deerfield Mgmt III, L.P., General Partner
By: J.E. Flynn Capital III, LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact