

| OMB APPROVAL | |
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INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES

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

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|---|--|---|--|
| 1. Name and Address of Reporting Person* <u>EcoR1 Capital Fund Qualified, L.P.</u> <hr/> (Last) (First) (Middle) <u>409 ILLINOIS STREET</u> <hr/> (Street) <u>SAN FRANCISCO CA 94158</u> <hr/> (City) (State) (Zip) | 2. Date of Event Requiring Statement (Month/Day/Year) <u>08/28/2017</u> | 3. Issuer Name and Ticker or Trading Symbol <u>aTYR PHARMA INC [ATYR]</u> | |
| | | 4. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director <input checked="" type="checkbox"/> 10% Owner Officer (give title below) Other (specify below) | 5. If Amendment, Date of Original Filed (Month/Day/Year) 6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person |

Table I - Non-Derivative Securities Beneficially Owned

| 1. Title of Security (Instr. 4) | 2. Amount of Securities Beneficially Owned (Instr. 4) | 3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5) | 4. Nature of Indirect Beneficial Ownership (Instr. 5) |
|---------------------------------|---|--|---|
| <u>Common Stock</u> | <u>3,193,541</u> | <u>D</u> | |

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

| 1. Title of Derivative Security (Instr. 4) | 2. Date Exercisable and Expiration Date (Month/Day/Year) | | 3. Title and Amount of Securities Underlying Derivative Security (Instr. 4) | 4. Conversion or Exercise Price of Derivative Security | 5. Ownership Form: Direct (D) or Indirect (I) (Instr. 5) | 6. Nature of Indirect Beneficial Ownership (Instr. 5) |
|--|--|-------------------|---|--|--|---|
| | Date Exercisable | Expiration Date | | | | |
| <u>Warrant</u> | <u>08/28/2017</u> | <u>12/31/2019</u> | <u>Common Stock</u> | <u>574,245</u> | <u>4.64</u> | <u>D</u> |

Explanation of Responses:

EcoR1 Capital Fund Qualified, L.P., by Oleg Nodelman, Manager of EcoR1 Capital, LLC, General Partner 09/05/2017

** 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 5 (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.