

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT3138895

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
LESLIE ANN GREENE	04/26/2013
KYLE P. CHIANG	04/25/2013
FEI HONG	04/25/2013
ALAIN PHILIPPE VASSEROT	04/19/2013
JEFFRY D. WATKINS	04/22/2013
CHERYL L. QUINN	05/14/2013
JOHN D. MENDLEIN	04/26/2013
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	ATYR PHARMA, INC.
<b>Street Address:</b>	3545 JOHN HOPKINS COURT
<b>Internal Address:</b>	SUITE #250
<b>City:</b>	SAN DIEGO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	92121
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	13809754
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(202)842-7899
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	(202) 842-7800
<b>Email:</b>	wthomas@cooley.com
<b>Correspondent Name:</b>	WENDY THOMAS
<b>Address Line 1:</b>	1299 PENNSYLVANIA, SUITE 700
<b>Address Line 2:</b>	PATENT DEPARTMENT/ATTN: MARK ROGEL
<b>Address Line 4:</b>	WASHINGTON, D.C. 20004
<b>ATTORNEY DOCKET NUMBER:</b>	ATYR-047/02US
<b>NAME OF SUBMITTER:</b>	MARK E. ROGEL
<b>SIGNATURE:</b>	/Mark E. Rogel/

PATENT

<b>DATE SIGNED:</b>	12/09/2014
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**Total Attachments: 10**  
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WHEREAS,

Leslie Ann Greene	13941 Davenport Avenue, San Diego, California 92129;
Kyle P. Chiang	1615 Debann Road, Cardiff, California 92007;
Fei Hong	12646 Spindletop Road, San Diego, California 92129;
Alain Philippe Vasserot	6421 La Paloma Street, Carlsbad, California 92009;
Jeffrey D. Watkins	3442 Fortuna Ranch Road, Encinitas, California 92024;
Cheryl L. Quinn	408 N. 1st Street, # 706, Minneapolis, Minnesota 55401; and
John D. Mendlein	1550 Neptune Avenue, Encinitas, California 92024

(each referred to as "Assignor") have made invention(s) (the "Invention(s)") set forth in applications for patent of the United States, which are:

Application No.	Title	International Filing Date
PCT/US2011/043596 13/809,750	INNOVATIVE DISCOVERY OF THERAPEUTIC, DIAGNOSTIC, AND ANTIBODY COMPOSITIONS RELATED TO PROTEIN FRAGMENTS OF ASPARTYL-TRNA SYNTHETASES	July 11, 2011
PCT/US2011/043756 13/809,754	INNOVATIVE DISCOVERY OF THERAPEUTIC, DIAGNOSTIC, AND ANTIBODY COMPOSITIONS RELATED TO PROTEIN FRAGMENTS OF GLYCYL-TRNA SYNTHETASES	July 12, 2011
PCT/US2011/043758 13/809,757	INNOVATIVE DISCOVERY OF THERAPEUTIC, DIAGNOSTIC, AND ANTIBODY COMPOSITIONS RELATED TO PROTEIN FRAGMENTS OF HISTIDYL-TRNA SYNTHETASES	July 12, 2011
PCT/US2011/049223 13/818,929	INNOVATIVE DISCOVERY OF THERAPEUTIC, DIAGNOSTIC, AND ANTIBODY COMPOSITIONS RELATED TO PROTEIN FRAGMENTS OF TYROSYL-TRNA SYNTHETASES	August 25, 2011
PCT/US2011/055130 13/877,899	INNOVATIVE DISCOVERY OF THERAPEUTIC, DIAGNOSTIC, AND ANTIBODY COMPOSITIONS RELATED TO PROTEIN FRAGMENTS OF TRYPTOPHANYL-TRNA SYNTHETASES	October 6, 2011

WHEREAS, aTyr Pharma, Inc., having its principal place of business at 3545 John Hopkins Court, Suite #250, San Diego, California 92121 (the "Assignee"), is desirous of acquiring the entire right, title, and interest in: the Inventions; the applications for patent identified in the table above; the right to file applications for patent of the United States or other countries on the Inventions; any applications for patent of the United States or other countries claiming priority to these applications; any provisionals or other right to recover damages, including royalties, for prior infringements of these

applications; and any patent of the United States or other countries that may be granted therefor or thereon.

**NOW, THEREFORE**, for good and sufficient consideration, the receipt of which is hereby acknowledged, and to the extent that the Assignor has not done so already via a prior agreement with the Assignee, or if the Assignor has already done so via a prior agreement with the Assignee then in confirmation of any obligation to do so in said prior agreement, the Assignor has sold, assigned, transferred, and set over, and by these presents does sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns, the Assignor's entire right, title, and interest in:

(a) the Invention(s);

(b) the applications for patent identified in the table above;

(c) the right to file applications for patent of the United States or other countries on the Invention(s), including all rights under the Hague Convention, the Paris Convention for the Protection of Industrial Property and under the Patent Cooperation Treaty;

(d) any application(s) for patent of the United States or other countries claiming the Invention(s);

(e) any application(s) for patent of the United States or other countries claiming priority to the applications for patent identified in the table above or any application(s) for patent claiming the Invention(s), including any division(s), continuation(s), and continuation(s)-in-part; and

(f) any provisionals or other right to recover damages, including royalties, for prior infringements of any applications for patent identified in the preceding paragraphs (b)-(e); and

(g) any patent(s) of the United States or other countries that may be granted for or on any applications for patent identified in the preceding paragraphs (b) – (e), including any reissue(s) and extension(s) of said patent(s).

The above-granted rights, titles, and interests are to be held and enjoyed by the Assignee, for its own use and behalf and the use and behalf of its successors, legal representatives, and assigns, as fully and entirely as the same would have been held and enjoyed by the Assignor had this sale and assignment not been made.

The Assignor hereby represents to the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, or if applicable, at such time said prior agreement was executed, the Assignor is a lawful owner of an undivided interest in the entire right, title, and interest in and to the Invention(s), that the Invention(s) are unencumbered, except, if applicable, by obligation to assign in accordance with said prior agreement, and that the Assignor has good and full right and lawful authority to sell and convey the same in the manner set forth herein.

The Assignor hereby covenants and agrees to and with the Assignee, its successors, legal representatives, and assigns, that the Assignor will sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done in connection with any and all proceedings for the procurement, maintenance, enforcement and defense of the Invention(s), said applications, and said patents, including interference proceedings, without charge to the Assignor, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns.

The Assignor hereby requests the Commissioner of Patents to issue said patents of the United States to the Assignee for the sole use and behalf of the Assignee, its successors, legal representatives, and assigns.

Date: 4/26/2013

By:   
Leslie Ann Greene

I certify that I know or have satisfactory evidence that Leslie Ann Greene signed this instrument of his/her own free will, as a voluntary act for the uses and purposes mentioned in the instrument.

Date 4-26-13  
(Type or Print)

Signed at 3885 John Hopkins Ct  
San Diego CA 92122

Bonnie Alexander  
(Type or Print Name of Witness)

Bonnie Alexander  
(Signature of Witness)

Date: 4/25/2013

By:   
Kyle P. Chiang

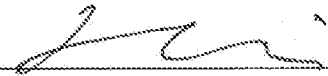
I certify that I know or have satisfactory evidence that Kyle P. Chiang signed this instrument of his/her own free will, as a voluntary act for the uses and purposes mentioned in the instrument.

Date 4-25-2013  
(Type or Print)

Signed at 3545 John Hopkins Ct  
SD CA 92101

Bonnie Alexander  
(Type or Print Name of Witness)

Bonnie Alexander  
(Signature of Witness)

Date: 4-25-2013 By:   
Fei Hong

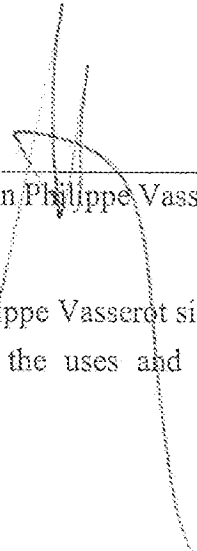
I certify that I know or have satisfactory evidence that Fei Hong signed this instrument of his/her own free will, as a voluntary act for the uses and purposes mentioned in the instrument.

Date 4-25-2013 Signed at 3545 John Hopkins Ct  
(Type or Print) SP VA 92121

Bonnie Alexander / Bonnie Alexander  
(Type or Print Name of Witness) (Signature of Witness)



Date: April 19<sup>th</sup>, 2013

By:   
Alain Philippe Vasserot

I certify that I know or have satisfactory evidence that Alain Philippe Vasserot signed this instrument of his/her own free will, as a voluntary act for the uses and purposes mentioned in the instrument.

Date 4/19/2013  
(Type or Print)

Signed at 3545 John Mackens Ct  
SUN DIEGO CA 92101

Bonnie Alexander  
(Type or Print Name of Witness)

Bonnie U Alexander  
(Signature of Witness)

Date: April 22, 2013

By:   
Jeffrey D. Watkins

I certify that I know or have satisfactory evidence that Jeffrey D. Watkins signed this instrument of his/her own free will, as a voluntary act for the uses and purposes mentioned in the instrument.

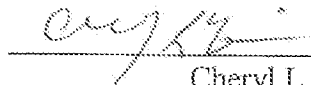
Date 4/22/13  
(Type or Print)

Signed at 3545 John Hopkins St  
San Diego CA 92101

Bonnie Alexander  
(Type or Print Name of Witness)

Bonnie Alexander  
(Signature of Witness)

Date: 14 May 2013

By:   
Cheryl L. Quinn

I certify that I know or have satisfactory evidence that Cheryl L. Quinn signed this instrument of his/her own free will, as a voluntary act for the uses and purposes mentioned in the instrument.

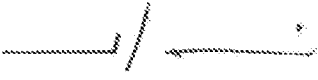
Date 14 May 2013  
(Type or Print)

Signed at 408 N 1<sup>st</sup> St, Minneapolis

Robert J Buck  
(Type or Print Name of Witness)

  
(Signature of Witness)

Date: April 26, 2013

By:   
John D. Mendlein

I certify that I know or have satisfactory evidence that John D. Mendlein signed this instrument of his/her own free will, as a voluntary act for the uses and purposes mentioned in the instrument.

Date April 26, 2013  
(Type or Print)

Signed at 3545 Win Hopkins Ct  
San Diego CA 92121

Bonnie Alexander  
(Type or Print Name of Witness)

Bonnie Alexander  
(Signature of Witness)