505537168 06/21/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5583965

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
STUART H. ORKIN	04/11/2013
JIAN XU	04/16/2013

RECEIVING PARTY DATA

Name:	HOWARD HUGHES MEDICAL INSTITUTE	
Street Address:	400 JONES BRIDGE ROAD	
City:	CHEVY CHASE	
State/Country:	MARYLAND	
Postal Code:	20815	

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	15816083	

CORRESPONDENCE DATA

Fax Number: (617)345-1300

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.

Phone: 617-345-1000

Email: rdean@nixonpeabody.com, bostonpatent@nixonpeabody.com

Correspondent Name: DAVID S. RESNICK
Address Line 1: NIXON PEABODY LLP
Address Line 2: 53 STATE STREET

Address Line 4: BOSTON, MASSACHUSETTS 02109

ATTORNEY DOCKET NUMBER:	701039-085138-DIV	
NAME OF SUBMITTER:	DAVID S. RESNICK	
SIGNATURE:	/David S. Resnick/	
DATE SIGNED:	06/20/2019	

Total Attachments: 4

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PATENT 505537168 REEL: 049546 FRAME: 0128

CONFIRMATION OF ASSIGNMENT

Confirmation of Assignment made __AfRIL_11_____, 2013 by Stuart H. Orkin, MD ("Inventor") to the Howard Hughes Medical Institute, a Delaware corporation ("HHMI").

Recitals

WHEREAS, Inventor is an employee of HHMI and, as a condition of his employment, has signed the Intellectual Property Assignment Agreement (the "Intellectual Property Agreement");

WHEREAS, pursuant to the Intellectual Property Agreement, Inventor (a) assigned to HHMI all rights he had in any intellectual property resulting from research by HHMI employees, alone or with others, whether or not patentable or copyrightable, and whether funded in whole or in part by HHMI (each a "Subject Property") and (b) agreed to execute any agreements that may be desired by HHMI in connection with such assignment;

WHEREAS, Inventor has, alone or with others invented "Targeting BCL11A Distal Regulatory Elements for Fetal Hemoglobin Reinduction for the Beta-Globin Disorders" which may be the subject of a patent application (the "Invention"), and the Invention is a Subject Property; and

WHEREAS, Inventor seeks to confirm the assignment of his interest in the Invention to HHMI, and HHMI desires the execution of a confirmatory assignment of all of Inventor's right, title, and interest in the Invention.

NOW, THEREFORE, in consideration of the promises contained in and the acts performed and to be performed pursuant to the Intellectual Property Agreement and of other good and valuable consideration, the receipt of which is hereby acknowledged by Inventor, Inventor agrees as follows:

1. Assignment. Inventor hereby confirms the assignment to HHMI of his entire right, title, and interest in the Invention; any United States patent applications and all corresponding foreign patent applications which are directed to the Invention (including, without limitation, the patent application entitled "Targeting BCL11A Distal Regulatory Elements for Fetal Hemoglobin Reinduction for the Beta-Globin Disorders" filed in the United States Patent and Trademark Office on November 27, 2012 with Serial Number 61/730,323 and "Targeting BCL11A Distal Regulatory Elements for Fetal Hemoglobin Reinduction for the Beta-Globin Disorders" filed in the United States Patent and Trademark Office on November 27, 2012 with Serial Number 61/730,369), and any and all patents issued therefrom; all United States or foreign division and continuation applications based on any of the foregoing, and any and all patents issued therefrom; and all claims which are directed to the Invention and which may be contained in continuation-in-part applications or in patents which issue therefrom.

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- 2. Cooperation. Inventor agrees to execute upon request such further confirmatory assignments, documents, and other instruments as may be requested by HHMI in connection with the Invention and to assist HHMI (or others at the direction of HHMI) in applying for, obtaining, and enforcing patents, copyrights, or other rights in the United States and in any foreign country with respect to the Invention.
- <u>Parties</u>. The terms and provisions of the Assignment shall inure to the benefit of HHMI and its successors and assigns and shall be binding on the Inventor and his heirs, personal representatives, successors and assigns.
- Warranty. Inventor warrants and represents that he has not entered into any assignment, contract, or understanding in conflict herewith.

Inventor:

Commonwealth of Massachusetts

County of SUFFOIK

Then personally appeared before me the above-named Stuart H. Orkin, MD and acknowledged that he executed the foregoing instrument in his authorized capacity this \\\\^4 day of <u>April</u>, 2013

(SEAL)

Notary Public: Jua Capo delego (print name)

My Commission Expires: June 20, 2019

CMCC 2449 HHMI 05392

Lisa D. Capodilupo Notary Public
Commonwealth of Massachusetts
My Commission Expires lune 20, 2019

CONFIRMATION OF ASSIGNMENT

Confirmation of Assignment made April 16th, 2013 by Jian Xu, PhD ("Inventor") to the Howard Hughes Medical Institute, a Delaware corporation ("HHMI").

Recitals

WHEREAS, Inventor was an employee of HHMI and, as a condition of his employment, has signed the Intellectual Property Assignment Agreement (the "Intellectual Property Agreement");

WHEREAS, pursuant to the Intellectual Property Agreement, Inventor (a) assigned to HHMI all rights he had in any intellectual property resulting from research by HHMI employees, alone or with others, whether or not patentable or copyrightable, and whether funded in whole or in part by HHMI (each a "Subject Property") and (b) agreed to execute any agreements that may be desired by HHMI in connection with such assignment;

WHEREAS, Inventor has, alone or with others invented "Targeting BCL11A Distal Regulatory Elements for Fetal Hemoglobin Reinduction for the Beta-Globin Disorders" which may be the subject of a patent application (the "Invention"), and the Invention is a Subject Property; and

WHEREAS, Inventor seeks to confirm the assignment of his interest in the Invention to HHMI, and HHMI desires the execution of a confirmatory assignment of all of Inventor's right, title, and interest in the Invention.

NOW, THEREFORE, in consideration of the promises contained in and the acts performed and to be performed pursuant to the Intellectual Property Agreement and of other good and valuable consideration, the receipt of which is hereby acknowledged by Inventor, Inventor agrees as follows:

- 1. Assignment. Inventor hereby confirms the assignment to HHMI of his entire right, title, and interest in the Invention; any United States patent applications and all corresponding foreign patent applications which are directed to the Invention (including, without limitation, the patent application entitled "Targeting BCL11A Distal Regulatory Elements for Fetal Hemoglobin Reinduction for the Beta-Globin Disorders" filed in the United States Patent and Trademark Office on November 27, 2012 with Serial Number 61/730,323 and "Targeting BCL11A Distal Regulatory Elements for Fetal Hemoglobin Reinduction for the Beta-Globin Disorders" filed in the United States Patent and Trademark Office on November 27, 2012 with Serial Number 61/730,369), and any and all patents issued therefrom; all United States or foreign division and continuation applications based on any of the foregoing, and any and all patents issued therefrom; and all claims which are directed to the Invention and which may be contained in continuation-in-part applications or in patents which issue therefrom.
- 2. <u>Cooperation</u>. Inventor agrees to execute upon request such further confirmatory assignments, documents, and other instruments as may be requested by HHMI in

PATENT REEL: 049546 FRAME: 0131 connection with the Invention and to assist HHMI (or others at the direction of HHMI) in applying for, obtaining, and enforcing patents, copyrights, or other rights in the United States and in any foreign country with respect to the Invention.

- 3. <u>Parties.</u> The terms and provisions of the Assignment shall inure to the benefit of HHMI and its successors and assigns and shall be binding on the Inventor and his heirs, personal representatives, successors and assigns.
- 4. <u>Warranty</u>. Inventor warrants and represents that he has not entered into any assignment, contract, or understanding in conflict herewith.

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Jian Xu, PhD

Commonwealth of Massachusetts

County of Suffalk

Then personally appeared before me the above-named Jian Xu, PhD and acknowledged that he executed the foregoing instrument in his authorized capacity this statement is statement.

of $A \circ 1$, 20 13.

STEVEN W. BARBOUR
Notary Public
Massachusetts
Commission Expires Sep 17, 2015

Notary Public:

Constant since

My Commission Expires: Sep 17, 2015

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