

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT5387806

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
HOWARD HUGHES MEDICAL INSTITUTE	04/06/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	President and Fellows of Harvard College
<b>Street Address:</b>	17 Quincy Street
<b>City:</b>	Cambridge
<b>State/Country:</b>	MASSACHUSETTS
<b>Postal Code:</b>	02138
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15960171
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(617)495-9568
<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>	
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<b>Email:</b>	siobhan_murphy@harvard.edu
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<b>Address Line 1:</b>	1350 MASSACHUSETTS AVE
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<b>ATTORNEY DOCKET NUMBER:</b>	6047
<b>NAME OF SUBMITTER:</b>	KAREN SINCLAIR
<b>SIGNATURE:</b>	/K.S./
<b>DATE SIGNED:</b>	02/22/2019
<b>Total Attachments: 3</b>	
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HU 6047 (Liu)  
WGS: H0824.70213US08  
Appl. No.: 15/331,852

## ASSIGNMENT

Assignor:  
HOWARD HUGHES MEDICAL INSTITUTE  
4000 Jones Bridge Road  
Chevy Chase, MD 20815

Assignee:  
PRESIDENT AND FELLOWS OF HARVARD COLLEGE  
17 Quincy Street  
Cambridge, MA 02138

WHEREAS, I, David R. Liu, of 3 Whitman Circle, Lexington, Massachusetts 02420, as a duly appointed agent of Howard Hughes Medical Institute (HHMI), have developed certain inventions described in U.S. Patent Application, U.S.S.N. 15/331,852 filed October 22, 2016, entitled "NUCLEOBASE EDITORS AND USES THEREOF," having full right to convey HHMI's entire right, title, and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

WHEREAS, PRESIDENT AND FELLOWS OF HARVARD COLLEGE ("Assignee"), a non-profit corporation of the state of Massachusetts, having its principal place of business at 17 Quincy Street, Cambridge, Massachusetts 02138, is desirous of acquiring the entire right, title, and interest in and to said invention or inventions and any and all patents to be obtained therefore;

NOW, THEREFORE, in consideration of good and valuable consideration, the receipt and sufficiency of which are hereby acknowledge by the undersigned does hereby sell, assign, transfer, and set over unto said Assignee, its successors and assigns, HHMI's entire right, title, and interest throughout the world in and to said invention or inventions, as described in the aforesaid application, in any form or embodiment thereof, and in and to the aforesaid application; and in and to any application filed in any foreign country based thereon, including the right to file said foreign applications and claim priority under the provisions of any international convention or treaty; also the entire right, title, and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention or inventions

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and any divisional, continuation, or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and the undersigned hereby authorizes and requests the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.

For purposes of complying with foreign requirements, the above paragraph is intended to expressly grant all the recited rights and grants in China, Korea, and Japan.

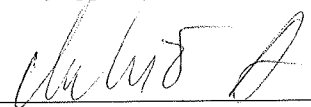
The undersigned further agrees, without any further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings whenever requested; testify in any interference or other legal proceedings, whenever requested; executed and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its successors or assigns and nominees to secure, obtain, and enforce proper patent protection for said invention or inventions in this or any foreign country.

Assignor authorizes Assignee or Assignee's representative to supply and/or to correct any errors in the patent/application information provided above including, but not limited to, said application serial number(s) and filing date(s), prior to or after recordation.

IN TESTIMONY WHEREOF, the undersigned had hereunto set his/her hand and seal on the date after his/her signature.

  
\_\_\_\_\_  
David R. Liu, Ph.D.  
As a duly appointed agent of the Howard Hughes Medical Institute

4-6-17  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Witness's Signature

4/6/17  
\_\_\_\_\_  
Date

ALEKS MARKOVIĆ  
\_\_\_\_\_  
Witness's Printed Name

APPOINTMENT OF INVESTIGATOR AS AGENT

Appointment by the Howard Hughes Medical Institute ("HHMI") of David Liu, PhD, an employee of HHMI, as its agent for the purpose of assigning certain rights to Harvard College, Faculty of Arts and Sciences ("Institution").

WHEREAS, HHMI and Institution collaborate in the active conduct of medical research pursuant to an Agreement between them dated as of December 1, 2013 (the "Agreement");

WHEREAS, pursuant to the Agreement, HHMI has agreed to assign to Institution HHMI's rights in Subject Property (as defined in the Agreement) in accordance with and subject to the conditions of the Agreement;

WHEREAS, research conducted pursuant to the Agreement by David Liu, PhD while employed by HHMI at Institution has resulted in the invention of a certain Subject Property entitled "Cas9 PACE Evolution of Universal PAM Acceptor," which is the subject of a patent application entitled "Cas Variants and Fusion Proteins Thereof for Gene Editing" filed in the U.S. Patent and Trademark Office on October 23, 2015 with Serial Number 62/245,828 (the "Invention"), and the Invention is a Subject Property; and

WHEREAS, HHMI wishes David Liu, PhD to act as its agent for the purpose of assigning to Institution the rights HHMI has in the Invention by reason of the research program conducted at Institution.

NOW THEREFORE, HHMI hereby appoints David Liu, PhD as its agent for the purpose of assigning the rights HHMI has or may acquire in the Invention to Institution in accordance with and subject to the conditions of the Agreement.

Executed: February 8, 2016

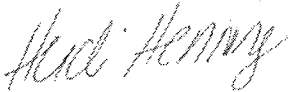
HOWARD HUGHES MEDICAL INSTITUTE



By:

Erin K. O'Shea, PhD  
Vice President and Chief Scientific Officer

ATTESTED:



Heidi E. Henning  
Vice President and General Counsel

HU 6047  
HHMI 06209