504116005 11/30/2016

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

SUBMISSION TYPE: NEW ASSIGNMENT NATURE OF CONVEYANCE: ASSIGNMENT

EPAS ID: PAT4162675

CONVEYING PARTY DATA

Name	Execution Date
JAMES EBERWINE	08/09/2013
DITTE LOVATT	08/15/2013
JULIA RICHARDS	10/30/2013
IVAN DMOCHOWSKI	05/24/2013
BRITTANI RUBLE	05/29/2013

RECEIVING PARTY DATA

Name:	THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA
Street Address:	3160 CHESTNUT STREET
Internal Address:	SUITE 200
City:	PHILADELPHIA
State/Country:	PENNSYLVANIA
Postal Code:	19104

PROPERTY NUMBERS Total: 4

Property Type	Number
Application Number:	13838504
Application Number:	61614940
Application Number:	13702415
Application Number:	61352199

CORRESPONDENCE DATA

Fax Number: (215)268-3871

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: 215-268-3888

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Correspondent Name: DARRYL PRATCHER, RIVERSIDE LAW LLP Address Line 1: GLENHARDIE CORPORATE CENTER Address Line 2: 1285 DRUMMERS LANE, SUITE 202

Address Line 4: WAYNE, PENNSYLVANIA 19087

ATTORNEY DOCKET NUMBER: 46483-5195-01-US.602306 NAME OF SUBMITTER: DARRYL PRATCHER

REEL: 040465 FRAME: 0990 504116005

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SIGNATURE:	/DARRYL PRATCHER/			
DATE SIGNED:	11/30/2016			
Total Attachments: 6				
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PATENT REEL: 040465 FRAME: 0991

ASSIGNMENT

WHEREAS, we, James EBERWINE, a citizen of the United States of America, with a mailing address of 3918 Henry Avenue, Philadelphia, PA 19129; Ditte LOVATT, a citizen of Denmark, with a mailing address of 318 N. Chester Road, Swarthmore, PA 19081; Julia RICHARDS, a citizen of the United States of America, with a mailing address of 101 S. 21st Street, Apt. 3B, Philadelphia, PA 19103; Ivan DMOCHOWSKI, a citizen of the United States of America, with a mailing address of 308 Pelham Road, Philadelphia, PA 19119; and Brittani RUBLE, a citizen of the United States of America, with a mailing address of 2300 Walnut Street, Apt. 429, Philadelphia, PA 19103; hereinafter generally referred to as "ASSIGNORS," have invented a certain new and useful

TRANSCRIPTOME IN VIVO ANALYSIS

for which we have filed a U.S. Patent Application No. 13/838,504, filed on March 15, 2013, which claims priority under 35 U.S.C. §119(e) to U.S. Provisional Patent Application No. 61/614,940, filed March 23, 2012, and is a continuation-in-part of, and claims priority to U.S. Patent Application No. 13/702,415, filed December 6, 2012, which is the U.S. national phase application filed under 35 U.S.C. §371 claiming benefit to International Patent Application No. PCT/US2011/039447, filed on June 7, 2011, which is entitled to priority under 35 U.S.C. §119(e) to U.S. Provisional Patent Application No. 61/352,199, filed June 7, 2010.

AND, WHEREAS, The Trustees Of The University Of Pennsylvania hereinafter referred to as the assignee, of 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, a university of higher education in Pennsylvania, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said provisional application, and to any patent application(s) corresponding thereto, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in exchange for valuable consideration from the receipt of which is hereby acknowledged and intending to be bound, we, the said assignors, have sold, assigned, transferred and set over, effective as of the execution date of this assignment and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title and interest in and to said inventions or improvements and said provisional application and any and all corresponding patent application(s) and continuations, divisions and renewals of and substitutes for said corresponding patent application(s), and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in our names corresponding patent applications for Letters Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by us had this assignment, sale and transfer not been made.

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AND we hereby covenant that we have full right to convey the entire interest herein assigned, and that we have not executed and will not execute any agreement in conflict herewith, and we further covenant and agree that we will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees or legal representatives, and we agree to communicate to said assignee, or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

AND we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents of applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

IN WITNESS WHEREOF, we have hereunto set our hand and seal. (Seal) James Eberwine STATE OF Pennsylvania COUNTY OF Philadelphia Before me, a notary public in and for the State and County aforesaid, on this of Maust, 2013, personally appeared James Eberwine, who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his/her free deed and act, signed, sealed and delivered by his/her for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded. Queline Mraglia COMMONWEALTH OF PENNSYLVANIA Notary Public Notarial Seal My Commission Expires: Jacqueline Miraglia, Notary Public City of Philadelphia, Philadelphia County My Commission Expires Aug. 29, 2015

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MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Date

Ditte Lovatt

STATE OF

Before me, a notary public in and for the State and County aforesaid, on this 15 day of AUQUS+, 2013, personally appeared Ditte Lovatt who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his/her free deed and act, signed, sealed and delivered by his/her for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded.

Notary Public
My Commission Expires:

COMMONWEALTH OF BE, INSYLVANIA

Notarial Seal

Natalie A. Cardwell, Notary Public
Darby Bero, Delaware County
My Commission Explais May 13, 2015

NUMBER, PERISYLVANIA ASSOCIATION OF NOTARIES

(Seal)

STATE OF Pennsylvania:

Before me, a notary public in and for the State and County aforesaid, on this 30of October, 2013, personally appeared Julia Richards who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his/her free deed and act, signed, sealed and delivered by his/her for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded.

> Notary Public Ay Commission Expires

COMMONWEALTH OF PENNSYLVANIA

Notarial Seal Jacqueline Miraglia, Notary Public City of Philadelphia, Philadelphia County My Commission Expires Aug. 29, 2015

MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Ivan Dmochowski

(Scal)

Before me, a notary public in and for the State and County aforesaid, on this 24k day 2013, personally appeared Ivan Dmochowski who being to me personally known, and who having first executed the foregoing instrument in my presence and have been by me first duly sworn, did acknowledge the foregoing instrument as his/her free deed and act, signed, sealed and delivered by his/her for the purpose therein stated and intending to be legally bound thereby and intending that said instrument be recorded.

My Commission Expires: 01-14-2017

COMMONWEALTH OF PENNSYLVANIA

NOTARIAL SEAL GERALDINE PETTEY, Notary Public City of Philadelphia, Phila, County

My Commission Expires January 14, 2017

5/29/13			Britan Rulle	(Seal)
Date	<u>.</u> .		Brittani Ruble	
STATE OF	PA	;		
COUNTY OF	Philadelph	: ss.	·	

Notary Public
My Commission Expires:

COMMONWEALTH OF PENNSYLVANIA

NOTARIAL SEAL CANDICE ADAMS, Notary Public City of Philadelphia, Phila. County My Commission Expires August 26, 2014

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PATENT REEL: 040465 FRAME: 0997