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PATENT ASSIGNMENT COVER SHEET

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CONVEYING PARTY DATA

Name	Execution Date
AGNES BIGGART	10/29/2014
FANG LIANG	10/29/2014
CASEY JACOB NELSON MATHISON	11/04/2014
VALENTINA MOLTENI	10/29/2014
ADVAIT SURESH NAGLE	10/29/2014
FRANTISEK SUPEK	10/29/2014
VINCE YEH	10/29/2014

RECEIVING PARTY DATA

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State/Country:	CALIFORNIA
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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15600183

CORRESPONDENCE DATA

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NAME OF SUBMITTER:	EMILY T WU
SIGNATURE:	/Emily T. Wu/

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Total Attachments: 11 source=PAT055930-US-DIV02 assignment inventors to NIFG#page1.tif source=PAT055930-US-DIV02 assignment inventors to NIFG#page2.tif source=PAT055930-US-DIV02 assignment inventors to NIFG#page3.tif source=PAT055930-US-DIV02 assignment inventors to NIFG#page4.tif source=PAT055930-US-DIV02 assignment inventors to NIFG#page5.tif source=PAT055930-US-DIV02 assignment inventors to NIFG#page6.tif source=PAT055930-US-DIV02 assignment inventors to NIFG#page7.tif source=PAT055930-US-DIV02 assignment inventors to NIFG#page8.tif source=PAT055930-US-DIV02 assignment inventors to NIFG#page9.tif source=PAT055930-US-DIV02 assignment inventors to NIFG#page10.tif source=PAT055930-US-DIV02 assignment inventors to NIFG#page11.tif

ASSIGNMENT

This Assignment Agreement is entered into by and between

Agnes BIGGART	Citizen of France	Novartis Institute for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation (GNF) 10675 John Jay Hopkins Drive San Diego, California 92121 US
Fang LIANG	Citizen of China	Novartis Institute for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation (GNF) 10675 John Jay Hopkins Drive San Diego, California 92121 US
Casey Jacob Nelson MATHISON	Citizen of United States of America	dba Genomics Institute of the Novartis Research Foundation (GNF) 10675 John Jay Hopkins Drive San Diego, California 92121 US
Valentina MOLTENI	Citizen of United States of America	Novartis Institute for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation (GNF) 10675 John Jay Hopkins Drive San Diego, California 92121 US
Advait Suresh NAGLE	citizen of United States of America	Novartis Institute for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation (GNF) 10675 John Jay Hopkins Drive San Diego, California 92121 US
Frantisek SUPEK	Citizen of United States of America	
Vince YEH	Citizen of Canada	Novartis Institute for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation (GNF) 10675 John Jay Hopkins Drive San Diego, California 92121 US

c/o NOVARTIS INSTITUTE FOR FUNCTIONAL GENOMICS, INC., Genomics Institute of the Novartis Research Foundation, 10675 John Jay Hopkins Drive, San Diego, California 92121, USA, (hereinafter "Inventor(s)"), and the **NOVARTIS INSTITUTE FOR FUNCTIONAL GENOMICS, INC.**, dba the GENOMICS INSTITUTE OF THE NOVARTIS RESEARCH FOUNDATION (GNF), 10675 John Jay Hopkins Drive, San Diego, California 92121, USA, a company organized under the laws of the State of Delaware.

For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, I/We the Inventor(s) do hereby confirm and agree that, by operation of law and/or contract, and/or by the fulfillment of any and all legal requirements regarding the transfer of employee inventions in my/our country of employment, GNF is the true and lawful owner of all right, title and interest in all inventions, discoveries, patents/utility models, applications, and rights described in paragraphs (1) through (8) below.

If, however, under the laws of any country, I/We the Inventor(s) nevertheless have any ownership right, title or interest in any of the items described herein (which I/We do not believe to be the case and make no claim in or to), for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, I/We the Inventor(s) do hereby sell, assign and transfer to GNF and its successors, assigns and legal representatives (hereinafter referred to collectively as the "ASSIGNEE"), all of our right, title and interest for all countries of the world in and to

(1) all of our inventions and discoveries described in the provisional or non-provisional patent, utility model, or other application(s) entitled

COMPOUNDS AND COMPOSITIONS FOR THE TREATMENT OF PARASITIC DISEASES [PAT055930]

and filed in the <u>to be determined</u> Office on <u>to be determined</u> and accorded Application Number <u>to be determined</u> and/or filed as a PCT International Application on <u>to be determined</u> and accorded International Patent Application Number PCT/<u>to be determined</u>; and/or filed in the United States Patent and Trademark Office on <u>December 19, 2013</u> and accorded Application Number <u>61/918089</u>;

- (2) the application(s) identified in paragraph (1), and all applications claiming priority from such application(s), directly or indirectly, including all national stages of any international patent application(s);
- (3) the right to file patent, utility model, or other applications on any invention or discovery disclosed in any of the applications identified in paragraphs (1) and (2), including the right to file such applications on said inventions and discoveries in the names of ASSIGNEE or their designees or in our/my name, at ASSIGNEE's election and in accordance with applicable law in all countries and regions; and the right to file all patent, utility model, or other applications in all countries and regions claiming the priority of any of the provisional or non-provisional application(s) identified in paragraphs (1) or (2);
- (4) all rights to claim priority from any of the applications referred to in paragraphs (1), (2), and (3) or from any application from which any of the applications referred to in paragraphs (1), (2) and (3) claim priority in all countries and regions under the Paris Convention for the Protection of Industrial Property, the WTO GATT TRIPS Agreement, the Inter-American Convention relating to Inventions, Patents, Designs, and Industrial Models and all other

international agreements to which the United States now is or hereafter becomes a signatory and, if the United States patent application is a provisional patent application, under 35 USC 119(e);

- (5) all continuations, continuations-in-part, and divisionals of any United States patent application(s) or international patent application(s) designating the United States, any national stages of any international application(s), and any other patent application(s) described in paragraphs (1) through (4) hereof, including further continuations, continuations-in-part, and divisionals such as, but not limited to, continuations of continuations and continuations of divisionals;
- (6) all patents, utility models, or other grants that issue from any of the applications referred to herein and all rights and remedies associated therewith including the right to sue for and recover past damages and to recover under 35 U.S.C. § 154 (d) or any other law permitting remedies for infringement prior to issuance of the patent;
- (7) all registrations and confirmations of, and importation certificates based upon, one or more of said patents, utility models, or other grants, and applications for such registrations, confirmations and importation certificates and;
- (8) all reissues, renewals and extensions of said patents, utility models, registrations, confirmations and importation certificates, reexamination certificates issued for said patents and supplementary protection certificates based upon said patents and applications for such reissues, renewals, extensions, reexamination certificates and supplementary protection certificates, the same to be held and enjoyed by said ASSIGNEE to the full ends of the terms for which said patents, utility models, registrations, confirmations, importation certificates, reexamination certificates, supplementary protection certificates, reissues, renewals and extensions may be granted, as fully and entirely as the same would have been held and enjoyed by me/us if this sale, assignment and transfer had not been made.

I/We the Inventor(s) hereby authorize ASSIGNEE and their representatives to insert in paragraph (1) of this Assignment the filing date(s) and Application Number(s) of said patent, utility model, or other application(s) when notified thereof.

I/We the Inventor(s) hereby covenant and agree that I/We will, at any time, (i) upon the request, but at the expense, of ASSIGNEE, execute and deliver all documents that may be necessary or desirable to perfect the title to the foregoing inventions and discoveries, applications, patents, utility models, registrations, confirmations, importation certificates, reissues, renewals, extensions, reexamination certificates, supplementary protection certificates, and applications within the scope of (7) and (8), in ASSIGNEE, including the execution and procurement of all further documents evidencing this sale, assignment and transfer as may be necessary or desirable for recording the same in the patent office or other intellectual property office, agency or the like of any country or region, (ii) upon the request, but at the expense, of ASSIGNEE execute all additional applications within the scope of paragraphs (1) through (6) and all applications within the scope of (7) or (8), and (iii) make all rightful oaths and declarations and do all lawful acts requisite for procuring the same or for aiding therein, without further compensation, but at the expense of ASSIGNEE.

Should any provision of this Assignment be deemed invalid or unenforceable by reason of any law, statute, regulation or judgment, existing now or in the future in any jurisdiction, such provision shall be modified in such jurisdiction so as to nearly approximate the intent of the Parties. If this cannot be done, such invalid or unenforceable provision shall be divisible and be deleted in any such jurisdiction, and all other provisions shall remain in full force and effect. The modification or deletion of any provision in one jurisdiction shall have no effect on this Assignment in any other jurisdiction.

This Assignment shall be governed by the laws of Delaware.

This Assignment is effective as from the earliest priority date as stated above.

Executed this _	29	_day of _	<u> Odober </u>	, 20 <u>14</u>
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BY	ACT CONTRACTOR		and the second	
Agnes BIGGA	RT V	· B		

Witnessed by:

Name: Chipang Amy Smith Name: STON SUSTAULUS DRILE
Address: 10675 John Jay Hop bins Dr. Address: 10675 John Jay Hop bins Dr. SAN DIECO CA 92121 U.S.A. SAN DIECO CA 92121, JS

Execu	ted this_	<u>29</u> day of _	<u> </u>	, 20_/5
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BY_		<u>Carrente</u>	B	······································
Fang J	LAANG	NAME OF THE PARTY		

Witnessed by:

Name: EMILY TWO.
Address: 10675 JOHN THOPKINS OR SANDIEGO, CA 92121 WA

ALLENS LANGESLOVICH

Name: 10 AD SUSAN SESLOVICH

Address: 10675 JOHN JAY MOPILING WILE

SAN VICEN, CA GOION US

Executed this May of May of	, 20 <u>1\</u>
BY Control Casey Jacob Nelson MATHISON	
Witnessed by: Sulan Supples Name: &SAN SESTOVICET Address: 10675 JOHN VAY 170 PKINS DEVE SANDIETO CA PHOLIS	Name: Address: IOGAS JOHN JAY HOAKINS DE SAN DEGO, CA 92/21 KSA

Executed this day of
BY
Witnessed by:
Name: Christine Kimball Name: 503 N SESPONCY
Name: Christine Kimball Name: 503/AN SESMONICH
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Executed this 29 day of October	_, 20	
BYAdvait Suresh NAGLE		
Witnessed by:	0 1	(₂₅

Name Chihang Amy Smith Name: 5/5AN SESNOVICET Address: 10675 John Ley Hopkins Dr. San Diego, CA 92121 USA. SAN DIEGO, CA 92121 USA.

Executed this 29 day of 0cfd/20	<u></u>
BY Frantisek SUPEK	
Witnessed by:	
Name: Chihang Amy Smith Address: 10675 John Jay Hopkins San Diego, CA 92121 USA	Address: 10675 JOHN JAY HOPKINS DELLE SAN DIEFO, CA PHOLUS
San Diego, CA 92121 USA	SAN DIEGO, SA MALOS

Executed this 2° day of 0°	, 20 <u>14</u>
BY Jee July Vince YEH	
Witnessed by:	4
Chan Day Smith	Sussemil
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10675 John Jay Hopkins Dr.	10125 JOHN STY 119 300
Name: JChlyang Amy Smith Address: 10675 John Jay Hopkins Dr. San Dago, CA 92121 U.SA.	The man do me -

NOVARTIS INSTITUTE FOR FUNCTIONAL GENOMICS, INC.
Executed this day of
BY Julie McCarthy General Counsel and Vice President Legal
Witnessed by:
Name: 0:11 R Clarko Name: SUSAN SESNOVICET Address: 10675 John Jay Harans Address: 10625 JOHN DUGO, CA 92121 SAN DIEGO, CA 92121