504563897 09/25/2017

PATENT ASSIGNMENT COVER SHEET

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NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
RAMA JAIN	08/02/2017
DENNIS CHRISTOFER KOESTER	08/02/2017
JAMES R. MANNING	08/02/2017
VANESSA MARX	08/21/2017
DANIEL POON	08/02/2017
JAMES CLIFFORD SUTTON	08/10/2017
BENJAMIN R. TAFT	08/03/2017
LIFENG WAN	08/11/2017
AREGAHEGN YIFRU	08/02/2017
QIAN ZHAO	08/21/2017

RECEIVING PARTY DATA

Name:	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH, INC.
Street Address:	250 MASSACHUSETTS AVENUE
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State/Country:	MASSACHUSETTS
Postal Code:	02139

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15686652

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ATTORNEY DOCKET NUMBER: PAT057348-US-NP

PATENT REEL: 043685 FRAME: 0211

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NAME OF SUBMITTER:	LISA NASH	
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DATE SIGNED:	09/25/2017	
Total Attachments: 8		
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PATENT REEL: 043685 FRAME: 0212

ASSIGNMENT

This Assignment Agreement is entered into by and between

RAMA JAIN, c/o Novartis Institutes for Biomedical Research, Inc., 5300 Chiron Way, Emeryville, CA 94608 US, a Citizen of UNITED STATES OF AMERICA;

DENNIS CHRISTOFER KOESTER, c/o Novartis Institutes for Biomedical Research, Inc., 5300 Chiron Way, Emeryville, CA 94608 US, a citizen of GERMANY;

JAMES R. MANNING, c/o Novartis Institutes for Biomedical Research, Inc., 5300 Chiron Way, Emeryville, CA 94608 US, a citizen of UNITED STATES OF AMERICA;

VANESSA MARX, c/o Novartis Institutes for Biomedical Research, Inc., 5300 Chiron Way, Emeryville, CA 94608 US, a citizen of CANADA

DANIEL POON, c/o Novartis Institutes for Biomedical Research, Inc., 5300 Chiron Way, Emeryville, CA 94608 US, a citizen of UNITED STATES OF AMERICA;

JAMES CLIFFORD SUTTON, c/o 3853 Stratford Court, Pleasanton, CA 94588 US, a citizen of UNITED STATES OF AMERICA;

BENJAMIN R. TAFT, c/o Novartis Institutes for Biomedical Research, Inc., 5300 Chiron Way, Emeryville, CA 94608 US, a citizen of UNITED STATES OF AMERICA;

LIFENG WAN, c/o Novartis Institutes for Biomedical Research, Inc., 5300 Chiron Way, Emeryville, CA 94608 US, a citizen of CHINA;

AREGAHEGN YIFRU, c/o Novartis Institutes for Biomedical Research, Inc., 5300 Chiron Way, Emeryville, CA 94608 US, a citizen of CANADA;

QIAN ZHAO, c/o Novartis Institutes for Biomedical Research, Inc., 5300 Chiron Way, Emeryville, CA 94608 US, a citizen of CHINA;

(hereinafter "Inventor(s)"), and NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH, INC., 250 MASSACHUSETTS AVENUE, CAMBRIDGE, MA 02139 US, 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, NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH, INC. 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.

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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 NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH, INC. 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

FUSED TRICYCLIC PYRIDAZINONE COMPOUNDS USEFUL TO TREAT ORTHOMYXOVIRUS INFECTIONS

and filed in the United States Patent and Trademark Office on 25
accorded Application Number \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
Application on 25 10057 2014 and accorded International Patent Application
Number PCT/ 18 2014(05513);

- (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;

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- (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 law of the State of Delaware.

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

Page 3 of 8

Executed this day of	<u>ugust</u> , 2017
Roma Jair	
RAMA JAIN	
Witness Signatures	*
1/2 / 1/2 /	5300 Chiron Way
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VANESSÁ MAI			š		
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Witness Signatur 5300 Chiron Way Emeryville, CA			2300 Chiron Emeryville, (way	-s. Crent
Executed this	Siffo.	d Sh	August	, 2017	
Witness Signatur Name: Ali ce Address: 7000 South	Z/ Rice	e Ct., Ste	350 Address: 7	this Kilerum oos Shoreline outh San Foorc	al ct, Sute 350 350,CA 94080

Executed this day of BENJAMIN R. TAFT	Patent Case PAT057348-US-NP
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Page 7 of 8

NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH, INC.

Executed this

day of

.2017

BY

David Carpenter

Authorized Signatory

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RECORDED: 09/25/2017