503364768 06/24/2015

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3411390

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
VINCE YEH	08/03/2012
XIAODONG LIU	08/01/2012
JON LOREN	08/16/2012
VALENTINA MOLTENI	08/01/2012
JULIET NABAKKA	08/01/2012
BAO NGUYEN	08/01/2012
HANK MICHAEL JAMES PETRASSI	08/09/2012
XIAOLIN LI	08/03/2012

RECEIVING PARTY DATA

Name:	NOVARTIS INSTITUTE FOR FUNCTIONAL GENOMICS, INC., DBA GENOMICS INSTITUTE OF THE NOVARTIS RESEARCH FOUNDATION,
Street Address:	10675 JOHN JAY HOPKINS DRIVE
City:	SAN DIEGO
State/Country:	CALIFORNIA
Postal Code:	92121

PROPERTY NUMBERS Total: 2

Property Type	Number	
Application Number:	13595575	
PCT Number:	US2012052621	

CORRESPONDENCE DATA

Fax Number:

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: 858-812-1525
Email: jclarke@gnf.org

Correspondent Name: DANIEL E RAYMOND/GNF

Address Line 1: 10675 JOHN JAY HOPKINS DRIVE Address Line 4: SAN DIEGO, CALIFORNIA 92121

ATTORNEY DOCKET NUMBER:	PAT054747-US-NP, WO
NAME OF SUBMITTER:	DANIEL E RAYMOND

PATENT 503364768 REEL: 036013 FRAME: 0364

SIGNATURE:	/DANIEL E RAYMOND/		
DATE SIGNED:	06/24/2015		
Total Attachments: 26			
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PATENT REEL: 036013 FRAME: 0365

ASSIGNMENT

This Assignment Agreement is entered into by and between

Vince YEH	citizen of Canada	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Xiaolin LI	citizen of People's Republic of China	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Xiaodong LIU	citizen of People's Republic of China	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Jon LOREN	citizen of United States of America	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Valentina MOLTENI	citizen of United States of America	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Juliet NABAKKA	citizen of United States of America	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Bao NGUYEN	citizen of United States of America	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US

Hank Michael James	citizen of United States of	Novartis Institution for Functional
PETRASSI	America	Genomics, Inc.
*		dba Genomics Institute of the Novartis
		Research Foundation
		10675 John Jay Hopkins Drive
1		San Diego, California 92121
		บร

c/o NOVARTIS INSTITUTE FOR FUNCTIONAL GENOMICS, INC., dba 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 AS C-KIT KINASE INHIBITORS [Patent Case PAT054747]

and filed in the (to be determined) Office on (to be determined) and accorded Application Number (to be determined); and/or filed as a PCT International Application on (to be determined) and accorded International Patent Application Number PCT (to be determined); and/or filed in the United States Patent and Trademark Office on September 01, 2011 and accorded Application Number 61/530,028;

- (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

PATENT REEL: 036013 FRAME: 0367 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 day of _	AVG	, 2012.	
BY 4650	<u>1</u>	L.S.	
Vince YEH			
ACKNOWLEDGEMENT			
State of California)		
),8.8.:		
County of San Diego)		
On August 3, 20/20 b Vince YEH who proved to m name(s) is lare subscribed to the the same in discher/their author instrument, the person(s), or th instrument.	e on the basis of s within instrument an orized capacity(igs), se entity upon beha	atisfactory evidence of acknowledged to me and that by his her of which the person of	to be the person(s) whose that he/she/they executed r/their signature(s) on the son(s) acted, executed the
I certify under PENALTY OF P paragraph is true and correct.	ERJURY under the	laws of the State of C	alifornia that the foregoing
WITNESS my hand and offici	al seal.	Approximation to	Andread
Signature Smale M.	Altane(S	eal)	PAMELA M. STONE Commission # 1870231 Notary Public - California San Diego County My Comm. Expires Nov 2, 2013

Executed this c	lay of	, 2012.
BY		L.S.
Xiaolin LI		
ACKNOWLEDGEME	NT	
State of California).	
) 8.8.;	
County of)	
Xiaolin LI who proved to is/are subscribed to the wain his/her/their authorize	o me on the basis of sa within instrument and ac d capacity(ies), and th	Notary Public, personally appeared atisfactory evidence to be the person(s) whose name(s) cknowledged to me that he/she/they executed the same at by his/her/their signature(s) on the instrument, the person(s) acted, executed the instrument.
I certify under PENALT paragraph is true and cor		r the laws of the State of California that the foregoing
WITNESS my hand an	d official seal.	
Signature		_ (Seal)

Executed this day of	August	_, 2012.	
BYXiaodong LIU		L.S.	
ACKNOWLEDGEMENT			
State of California)		
County of San Diego) s.s.:)		
name(s) (is lare subscribed to the withe same in his their author	ne on the basis of vithin instrument ar ized capacity(ies)	satisfactory e id acknowled , and that b	Public, personally appeared evidence to be the person(s) whose ged to me that he she/they executed y (his/her/their signature(s) on the the person(s) acted, executed the
I certify under PENALTY OF PE paragraph is true and correct.	RJURY under the	laws of the S	tate of California that the foregoing
WITNESS my hand and official	d seal.		
Signature Banda n	ⁿ whiteman (S	leal)	PAMELA M. STONE Commission # 1870231 Notary Public - Californis San Diego County My Comm. Expires Nov 2, 2013

Executed this <u>to</u> day of	Agree	. 2012.		
BY Jon LOREN		L.S.		
ACKNOWLEDGEMENT				
State of California)) s.s.:			
County of San Diego)			
On	e on the basis of s vithin instrument ar rized capacity(ies).	satisfactory ev ad acknowleds and that by	ridence to be ged to me that his/her/their	the person(s) whose fie/she/they executed signature(s) on the
I certify under PENALTY OF PE paragraph is true and correct.	RJURY under the	laws of the St	ate of Califor	nia that the foregoing
WITNESS my hand and officia	al seal.			
Signature Ranka Yn	<u>Å</u> (S	eal)		PAMELA M. STONE Commission # 1870231 Notary Public - California San Diego County Ly Comm. Expires Nov 2, 2013

Executed this/_ day o	a <u>August</u>	, 2012.		
BY Medicles	, , , , , , , , , , , , , , , , , , ,	L.S.		
Valentina MOLTENI		,		
ACKNOWLEDGEMENT				
State of California)			
) s.s.;			
County of San Diego)			
On August 1, 20,2. Valentina MOLTENI who pulses name(s) stare subscribe executed the same in his/her/ti instrument, the person(s), or instrument. Leartify under PENALTY OF	proved to me on the bed to the within in their authorized caper the entity upon	he basis of sanstrument and acity(ięs), and behalf of wh	tisfactory evide I acknowledged that by his/her ich the person	ence to be the person(s) d to me that he/she/they their signature(s) on the n(s) acted, executed the
I certify under PENALTY OF paragraph is true and correct.	· PERJUKT BROCK	the laws of th	e State of Can	formia that the foregoing
WITNESS my hand and off	ficial seal.			PAMELA M. STONE
Signature Sandle	M. Shows	(Seal)		Commission & 1870231 Notary Public - California San Diego County ty Comm. Expires Nov 2, 2013

Executed this day ofAugust	, 2012.	
BY Jobakka Juliet NABAKKA	LS.	5.
ACKNOWLEDGEMENT		
State of California) s.s.:		
County of San Diego)		
On August / AD/2 before me, Pa Juliet NABAKKA who proved to me on the name(s) Sure subscribed to the within instruthe same in his/her/their authorized capac instrument, the person(s), or the entity up instrument.	basis of satisfact ment and acknov city(ips), and tha	ctory evidence to be the person(s) whose owledged to me that he/she/they executed nat by his/her/their signature(s) on the
I certify under PENALTY OF PERJURY unparagraph is true and correct.	der the laws of the	the State of California that the foregoing
WITNESS my hand and official seal.		
Signature Samula yn Abra	(Seal)	PAMELA M. STONE Commission # 1870231 Notary Public - California San Diego Gounty My Comm. Expires Nov 2, 2013

Executed this 1st day of August , 2012.
BY L.S. Bao NGUYEN
ACKNOWLEDGEMENT
State of California) s.s.:
County of San Diego)
On
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.
Signature San Jay (Seal) PAMELA M. STONE Commission # 1870231 Notary Public - California San Diego County My Comm. Expires Nov 2, 2013

Executed this day of
BYLS. Hank Michael James PETRASSI
ACKNOWLEDGEMENT
State of California)) s.s.:
County of San Diego)
On
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.
Signature (Seal) PAMELA M. STONE Commission # 1870231 Notary Public - California San Diago County My Comm. Expires Nov 2, 2013

Executed this $2\lambda^{\circ}$ day of	Dogost	, 2012.		
Novartis Institute for Functions	d Genomics, Inc.			
BY Timothy L. Smith Authorized Signatory		L.S.		
ACKNOWLEDGEMENT				
State of California)			
).s.s.:			
County of San Diego)			
On August 21, 20/1 be Timothy L. Smith who proved to name(s) (share subscribed to the withe same in (his/her/their authorinstrument, the person(s), or the instrument.	o me on the basis of vithin instrument an rized capacity(jes),	f satisfactory d acknowled, and that by	evidence to l ged to me the y his/her/the	the person(s) whose it he/she/they executed ir signature(s) on the
I certify under PENALTY OF PE paragraph is true and correct.	RJURY under the l	laws of the S	tate of Califo	rnia that the foregoing
WITNESS my hand and officia	il seal.			
Signature	<u>Garen</u> (Si	eal)		PAMELA M. STONE Commission # 1870231 Notary Public - California San Diego Gounty y Comm. Expires Nov 2, 2013

ASSIGNMENT

This Assignment Agreement is entered into by and between

Vince YEH	citizen of Canada	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Xiaolin LI	citizen of People's Republic of China	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Xiaodong LIU	citizen of People's Republic of China	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Jon LOREN	citizen of United States of America	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Valentina MOLTENI	citizen of United States of America	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Juliet NABAKKA	citizen of United States of America	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US
Bao NGUYEN	citizen of United States of America	Novartis Institution for Functional Genomics, Inc. dba Genomics Institute of the Novartis Research Foundation 10675 John Jay Hopkins Drive San Diego, California 92121 US

Hank Michael James	citizen of United States of	Novartis Institution for Functional
PETRASSI	America	Genomics, Inc.
		dba Genomics Institute of the Novartis
		Research Foundation
		10675 John Jay Hopkins Drive
		San Diego, California 92121
		US

c/o NOVARTIS INSTITUTE FOR FUNCTIONAL GENOMICS, INC., dba 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 AS C-KIT KINASE INHIBITORS [Patent Case PAT054747]

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>September 01, 2011</u> and accorded Application Number <u>61/530,028</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

PATENT REEL: 036013 FRAME: 0380 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

Page 3 of 13

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 day	of, 2012.
BY	L.S.
Vince YEH	
ACKNOWLEDGEMENT	•
State of California)
) s.s.:
County of San Diego)
Vince YEH who proved name(s) is/are subscribed to the same in his/her/their a	before me, <u>Pamela M. Stone</u> , Notary Public, personally appeared to me on the basis of satisfactory evidence to be the person(s) whose the within instrument and acknowledged to me that he/she/they executed authorized capacity(ies), and that by his/her/their signature(s) on the or the entity upon behalf of which the person(s) acted, executed the
I certify under PENALTY C paragraph is true and correct	OF PERJURY under the laws of the State of California that the foregoing
WITNESS my hand and o	fficial seal.
Signature	(Seal)

Executed this 31d day of Avguse , 2012.

BY L.S

ACKNOWLEDGEMENT

State of California

) s.s.:

County of Alarreda

On August 3,2012 before me, Alishia L. Collins Rowe-Babb, Notary Public, personally appeared Xiaolin LI who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument, the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature alder f. l. M. M. (Seal)

ALISHIA L. COLLINS ROWE-BABB
Commission # 1916015
Notary Public - California
Alameda County
My Comm. Expires Dec 9, 2014

Executed this day of	f, 2012.
BYXiaodong LIU	L.S.
Xiaodong LIU	
ACKNOWLEDGEMENT	
State of California)
) s.s.:
County of San Diego)
Xiaodong LIU who proved to name(s) is/are subscribed to the the same in his/her/their aut	efore me, <u>Pamela M. Stone</u> , Notary Public, personally appeared to me on the basis of satisfactory evidence to be the person(s) whose within instrument and acknowledged to me that he/she/they executed thorized capacity(ies), and that by his/her/their signature(s) on the the entity upon behalf of which the person(s) acted, executed the
I certify under PENALTY OF paragraph is true and correct.	PERJURY under the laws of the State of California that the foregoing
WITNESS my hand and off	icial seal.
Signature	(Seal)

Executed this day	y of, 2012.
BY Jon LOREN	L.S.
ACKNOWLEDGEMEN	Т
State of California)) s.s.:
County of San Diego	
Jon LOREN who proved name(s) is/are subscribed t the same in his/her/their	before me, <u>Pamela M. Stone</u> , Notary Public, personally appeared to me on the basis of satisfactory evidence to be the person(s) whose of the within instrument and acknowledged to me that he/she/they executed authorized capacity(ies), and that by his/her/their signature(s) on the or the entity upon behalf of which the person(s) acted, executed the
I certify under PENALTY paragraph is true and correct	OF PERJURY under the laws of the State of California that the foregoing et.
WITNESS my hand and	official seal.
Signature	(Seal)

Executed this day	of, 2012.
ВҮ	L,S.
Valentina MOLTENI	
ACKNOWLEDGEMENT	
State of California)
) s.s.:
County of San Diego)
Valentina MOLTENI who whose name(s) is/are subsc executed the same in his/her	before me, <u>Pamela M. Stone</u> , Notary Public, personally appeared proved to me on the basis of satisfactory evidence to be the person(s) ribed to the within instrument and acknowledged to me that he/she/they/their authorized capacity(ies), and that by his/her/their signature(s) on the or the entity upon behalf of which the person(s) acted, executed the
I certify under PENALTY (paragraph is true and correct	OF PERJURY under the laws of the State of California that the foregoing t.
WITNESS my hand and o	official seal.
Signature	(Seal)

Executed this day	of, 2012.
BY Juliet NABAKKA	L.S.
Juliet NABAKKA	
ACKNOWLEDGEMENT	
State of California)
) s.s.:
County of San Diego)
Juliet NABAKKA who pro name(s) is/are subscribed to the same in his/her/their	before me, <u>Pamela M. Stone</u> , Notary Public, personally appeared oved to me on the basis of satisfactory evidence to be the person(s) whose the within instrument and acknowledged to me that he/she/they executed authorized capacity(ies), and that by his/her/their signature(s) on the or the entity upon behalf of which the person(s) acted, executed the
I certify under PENALTY (paragraph is true and correct	OF PERJURY under the laws of the State of California that the foregoing t.
WITNESS my hand and o	official seal.
Signature	(Seal)

Executed this day	of, 2012.
BY	L.S.
Bao NGUYEN	
ACKNOWLEDGEMENT	
State of California)
) s.s.:
County of San Diego)
Bao NGUYEN who proved name(s) is/are subscribed to the same in his/her/their a	before me, <u>Pamela M. Stone</u> , Notary Public, personally appeared to me on the basis of satisfactory evidence to be the person(s) whose the within instrument and acknowledged to me that he/she/they executed authorized capacity(ies), and that by his/her/their signature(s) on the or the entity upon behalf of which the person(s) acted, executed the
I certify under PENALTY C paragraph is true and correct	OF PERJURY under the laws of the State of California that the foregoing.
WITNESS my hand and o	fficial seal.
Signature	(Seal)

Executed this day	of, 2012.
BY_ Hank Michael James Pl	L.S.
Hank Michael James Pl	TRASSI
ACKNOWLEDGEMEN'	
State of California)
) s.s.:
County of San Diego)
Hank Michael James PET person(s) whose name(s) i he/she/they executed the	before me, <u>Pamela M. Stone</u> , Notary Public, personally appeared RASSI who proved to me on the basis of satisfactory evidence to be the are subscribed to the within instrument and acknowledged to me that are in his/her/their authorized capacity(ies), and that by his/her/their nt, the person(s), or the entity upon behalf of which the person(s) acted
I certify under PENALTY paragraph is true and correct	OF PERJURY under the laws of the State of California that the foregoing
WITNESS my hand and	fficial seal.
Signature	(Seal)

Executed this day of	Rugust	, 2012.				
Novartis Institute for Functiona	d Genomies, Inc					
BYTimothy L. Smith	X	L.S.				
Timothy L. Smith Authorized Signatory						
ACKNOWLEDGEMENT						
State of California)					
State of California County of San Diego) s.s.:					
County of San Diego)					
On August 21, 20/2 before me, Pamela M. Stone, Notary Public, personally appeared Timothy L. Smith who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is are subscribed to the within instrument and acknowledged to me that he she/they executed the same in his her/their authorized capacity(ies), and that by his her/their signature(s) on the instrument, the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.						
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.						
WITNESS my hand and officia	l seal.					
Signature Beneda in .	Mina. (Seal)		PAMELA M. STONE Commission # 1870231 Notary Public - California \$ San Diego County V Comm. Expires Nov 2, 2013		

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