

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT4972607

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
ALEX ARONOV	06/24/2011
JON H. COME	06/22/2011
ROBERT J. DAVIES	06/24/2011
ALBERT CHARLES PIERCE	06/23/2011
PHILIP N. COLLIER	06/23/2011
RONALD LEE GREY JR.	06/27/2011
HARDWIN O'DOWD	06/22/2011
JAMES A. HENDERSON	06/22/2011
ELAINE B. KRUEGER	06/22/2011
ARNAUD LE TIRAN	06/22/2011
YUSHENG LIAO	06/22/2011
DAVID MESSERSMITH	06/22/2011
JIAN WANG	06/23/2011
SUGANTHINI S. NANTHAKUMAR	06/23/2011
JINGRONG CAO	06/23/2011
UPUL KEERTHI BANDARAGE	06/23/2011
ANNE-LAURE GRILLOT	06/27/2011
RECEIVING PARTY DATA	
Name:	VERTEX PHARMACEUTICALS INCORPORATED
Street Address:	130 WAVERLY STREET
City:	CAMBRIDGE
State/Country:	MASSACHUSETTS
Postal Code:	02139-4242
PROPERTY NUMBERS Total: 3	
Property Type	Number
Application Number:	15603145
Patent Number:	9676759
Patent Number:	8466288

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.

Email: ke.yang@bclplaw.com**Correspondent Name:** BRYAN CAVE LEIGHTON PAISNER LLP**Address Line 1:** 1290 AVENUE OF THE AMERICAS**Address Line 4:** NEW YORK, NEW YORK 10104

NAME OF SUBMITTER:	KE YANG
SIGNATURE:	/Ke Yang/
DATE SIGNED:	05/22/2018

Total Attachments: 21

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ASSIGNMENT

We,

- (1) Alex Aronov, of Newton, Massachusetts;
- (2) Jon H. Come, of Cambridge, Massachusetts;
- (3) Robert J. Davies, of Watertown, Massachusetts;
- (4) Albert Charles. Pierce, of Cambridge, Massachusetts;
- (5) Philip N. Collier, of Cambridge, Massachusetts;
- (6) Ronald Lee Grey Jr., of Mansfield, Massachusetts;
- (7) Hardwin O'Dowd, of Boston, Massachusetts;
- (8) James A. Henderson, of Cambridge, Massachusetts;
- (9) Elaine B. Krueger, of Milton, Massachusetts;
- (10) Arnaud Le Tiran, of Lexington, Massachusetts;
- (11) Yusheng Liao of Lexington, Massachusetts;
- (12) David Messersmith, of Somerville, Massachusetts;
- (13) Jian Wang, of Newton, Massachusetts;
- (14) Suganthini S. Nanthakumar, of Newton, Massachusetts;
- (15) Jingrong Cao, of Newton, Massachusetts;
- (16) Upul Keerthi Bandarage, of Lexington, Massachusetts; and
- (17) Anne-Laure Grillot, of Somerville, Massachusetts;

for good and valuable consideration, receipt of which is hereby acknowledged, have assigned, sold and transferred to, by virtue of our agreement with Vertex

Pharmaceuticals Incorporated and do hereby assign, sell and transfer to, Vertex

Pharmaceuticals Incorporated, a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having an office and a place of business at 130 Waverly Street, Cambridge, MA 02139, its successors and assigns, all hereinafter referred to as the ASSIGNEE:

(1) the entire right, title and interest in the United States and in all countries throughout the world in and to any and all of our inventions, and discoveries disclosed in:

(a) the application for United States Letters Patent entitled:
ISOINDOLINONE INHIBITORS OF PHOSPHATIDYLINOSITOL 3-KINASE , and
filed in the United States Patent and Trademark Office on December 17, 2010, under
Application Number 12/974,388, including any renewals, revivals, reissues,
reexaminations, extensions, continuations, and divisions thereof, and any substitute
applications therefor, and/or

(b) the International Patent Application entitled: ISOINDOLINONE
INHIBITORS OF PHOSPHATIDYLINOSITOL 3-KINASE, filed under the Patent
Cooperation Treaty in the United States Receiving Office on December 17, 2010, under
Application No. PCT/US10/61484, and designating all countries, including any
renewals, revivals, reissues, reexaminations, extensions, continuations and divisions
thereof, and any substitute applications therefor;

(2) the full and complete right to file patent applications in the name of the
ASSIGNEE, its designee, or in our names at the election of the ASSIGNEE or its
designee, on the aforesaid inventions, discoveries and applications in the United States
and in any other country of the world;

(3) the entire right, title and interest in and to any Letters Patent which may issue
thereon in the United States or in any other country of the world, and in and to any
renewals, revivals, reissues, reexaminations, extensions, continuations and divisions
thereof; and

(4) the entire right, title and interest in and to all Convention and Treaty Rights of
all kinds thereon, including without limitation all rights of priority in any country of the
world, in and to the above inventions, discoveries and applications including, but not
limited to, the following priority application(s):

<u>Application No.</u>	<u>Country</u>	<u>Filing Date</u>
61/289,003	United States of America	December 22, 2009
61/350,631	United States of America	June 2, 2010
61/369,201	United States of America	July 30, 2010
61/387,582	United States of America	September 29, 2010

and all rights of priority in any country of the world deriving from the above-
identified International Patent Application.

We hereby authorize and request the competent authorities to grant and to issue any and all such Letters Patent in the United States and throughout the world to the ASSIGNEE of the entire right, title and interest therein, as fully and entirely as the same would have been held and enjoyed by us had this assignment, sale and transfer not been made.

We agree, at any time, upon the request of the ASSIGNEE to execute and to deliver to the ASSIGNEE any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents of confirmation, registration and importation based on any Letters Patent issuing on said inventions, discoveries or applications, and divisions, continuations, renewals, revivals, reissues, reexaminations and extensions thereof.

We further agree at any time to execute and to deliver upon request of the ASSIGNEE such additional documents, if any, as are necessary or desirable to secure patent protection on said inventions, discoveries and applications throughout all countries of the world, and otherwise to do the necessary to give full effect to and to perfect the rights of the ASSIGNEE under this Assignment, including the execution, delivery and procurement of any and all further documents evidencing this assignment, transfer and sale as may be necessary or desirable.

Alex Aronov
(1) Alex Aronov

Date: 6/24/2011

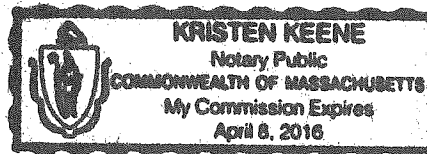
Commonwealth of Massachusetts
County of Middlesex

On this 24th day of June, 2011, before me, the undersigned notary public, personally appeared Alex Aronov, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene

Notary Public

My Commission Expires: 4/8/2016



Jon H. Come

(2) Jon H. Come

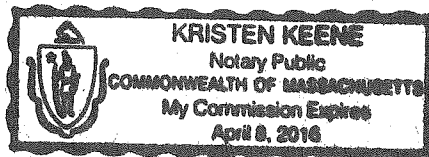
Date: June 22, 2011

Commonwealth of Massachusetts
County of Middlesex

On this 22nd day of June, 2011, before me, the undersigned notary public, personally appeared Jon H. Come, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public

My Commission Expires: 4/8/2016.



Robert J. Davies

(3) Robert J. Davies

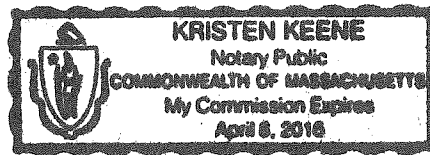
Date: 6/24/11

Commonwealth of Massachusetts
County of Middlesex

On this 24th day of June, 2011, before me, the undersigned notary public, personally appeared Robert J. Davies, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public

My Commission Expires: 4/8/2016



Albert Charles Pierce

(4) Albert Charles Pierce

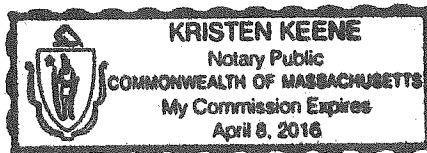
Date: June 23, 2011

Commonwealth of Massachusetts
County of Middlesex

On this 23rd day of June, 2011, before me, the undersigned notary public, personally appeared Albert Charles Pierce, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public

My Commission Expires: 4/8/2016



Philip N. Collier

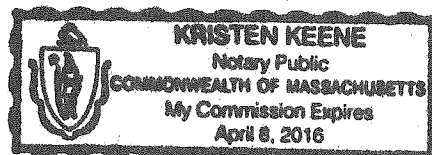
(5) Philip N. Collier

Date: 6/23/2011

Commonwealth of Massachusetts
County of Middlesex

On this 23rd day of June, 2011, before me, the undersigned notary public, personally appeared Philip N. Collier, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public
My Commission Expires: 4/8/2016



Ronald Lee Grey, Jr.

(6) Ronald Lee Grey, Jr.

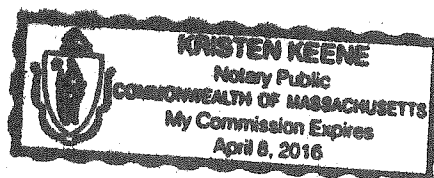
Date: 6/27/2011

Commonwealth of Massachusetts
County of Middlesex

On this 27th day of June, 2011, before me, the undersigned notary public, personally appeared Ronald Grey, Jr., proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public

My Commission Expires: 4/8/2016



Hardwin O'Dowd

(7) Hardwin O'Dowd

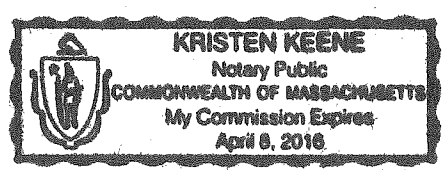
Date: 6/22/2011

Commonwealth of Massachusetts
County of Middlesex

On this 22nd day of June, 2011, before me, the undersigned notary public, personally appeared Hardwin O'Dowd, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public

My Commission Expires: 4/8/2016



James A Henderson

(8) James A. Henderson

Date: 6/22/2011

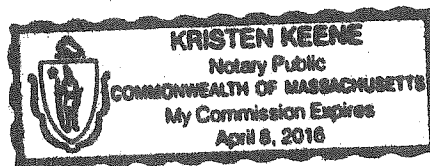
Commonwealth of Massachusetts
County of Middlesex

On this 22nd day of June, 2011, before me, the undersigned notary public, personally appeared James A. Henderson, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene

Notary Public

My Commission Expires: 4/8/2016



Elaine B. Krueger

(9) Elaine B. Krueger

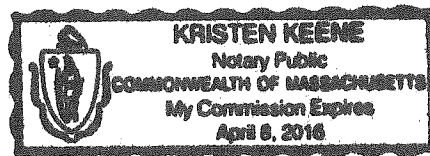
Date: June 22, 2011


Commonwealth of Massachusetts
County of Middlesex

On this 22nd day of June, 2011, before me, the undersigned notary public, personally appeared Elaine B. Krueger, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public

My Commission Expires: 4/8/2016.

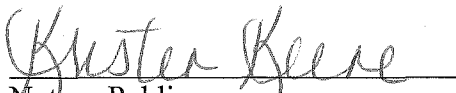



(10) Arnaud Le Tiran

Date: 6/22/11

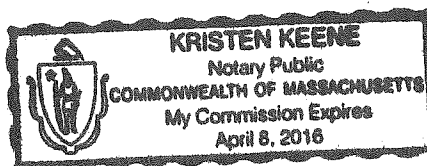
Commonwealth of Massachusetts
County of Middlesex

On this 22nd day of June, 2011, before me, the undersigned notary public, personally appeared Arnaud Le Tiran, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.



Notary Public

My Commission Expires: 4/8/2016



yusheng Liao

(11) Yusheng Liao

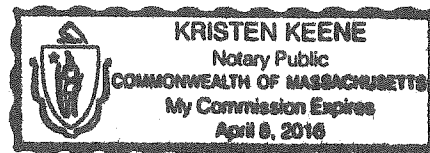
Date: 6/22/11

Commonwealth of Massachusetts
County of Middlesex

On this 22nd day of June, 2011, before me, the undersigned notary public, personally appeared Yusheng Liao, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public

My Commission Expires: 4/8/2016

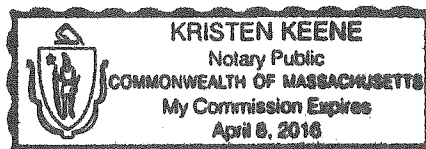


David Messersmith
(12) David Messersmith
Date: 22 June 2011

Commonwealth of Massachusetts
County of Middlesex

On this 22nd day of June, 2011, before me, the undersigned notary public, personally appeared David Messersmith, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public
My Commission Expires: 4/8/2016.



Wang
(13) Jian Wang

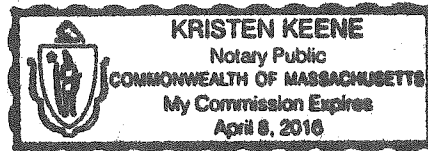
Date: 06/23/2011

Commonwealth of Massachusetts
County of Middlesex

On this 23rd day of June, 2011, before me, the undersigned notary public, personally appeared Jian Wang, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public

My Commission Expires: 4/8/2016



Suganthini S. Nanthakumar

(14) Suganthini S. Nanthakumar

Date: 8 6/23/2011

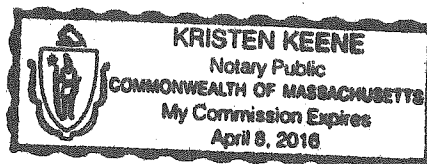
Commonwealth of Massachusetts
County of Middlesex

On this 23rd day of June, 2011, before me, the undersigned notary public, personally appeared Suganthini S. Nanthakumar, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene

Notary Public

My Commission Expires: 4/8/2016.



Jingrong Cao

(15) Jingrong Cao

Date: 6-23-2011

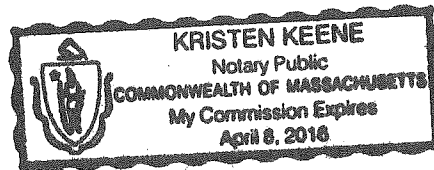
Commonwealth of Massachusetts
County of Middlesex

On this 23rd day of June, 2011, before me, the undersigned notary public, personally appeared Jingrong Cao, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene

Notary Public

My Commission Expires: 4/8/2016.



Upul Keerthi Bandarage

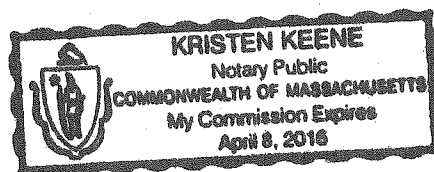
(16) Upul Keerthi Bandarage

Date: 06/23/2011

Commonwealth of Massachusetts
County of Middlesex

On this 23rd day of June, 2011, before me, the undersigned notary public, personally appeared Upul Keerthi Bandarage, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene
Notary Public
My Commission Expires: 4/8/2016



Anne-Laure Grillot

(17) Anne-Laure Grillot

Date: 06/27/2011

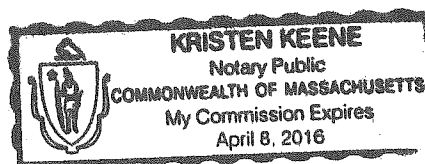
Commonwealth of Massachusetts
County of Middlesex

On this 27th day of June, 2011, before me, the undersigned notary public, personally appeared Anne-Laure Grillot, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Kristen Keene

Notary Public

My Commission Expires: 4/8/2016



ACKNOWLEDGMENT OF ASSIGNEE

By: _____

Stephen Nesbitt

Chief Patent Counsel

VERTEX PHARMACEUTICALS INCORPORATED

Date: Stephen Nesbitt July 6, 2011

Commonwealth of Massachusetts

County of Middlesex

On this 6th day of July, 2011, before me, the undersigned notary public, personally appeared Stephen Nesbitt, proved to me through satisfactory evidence of identification which was/were: ☒ personal knowledge of identity, ☐ a driver's license, ☐ other (please identify) _____, to be the person whose name is signed on this document, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his/her knowledge and belief.

Lauren M DeVincenzo
Notary Public

My Commission Expires: December 17, 2015

