PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
James A. Henderson	12/03/2010
John Maxwell	12/14/2010
Louis Vaillancourt	12/13/2010
Mark Morris	01/04/2011
Ronald Grey Jr.	12/09/2010
Simon Giroux	12/03/2010
Laval Chan Chun Kong	12/13/2010
Sanjoy Kumar Das	12/13/2010
Bingcan Liu	12/13/2010
Carl Poisson	12/14/2010
Caroline Cadilhac	12/14/2010
Monica Bubenik	12/13/2010
T. Jagadeeswar Reddy	12/13/2010
Guy Falardeau	12/13/2010
Constantin Yannopoulos	12/13/2010
Jian Wang	12/09/2010
Oswy Z. Pereira	12/13/2010
Youssef L. Bennani	12/03/2010
Albert C. Pierce	12/06/2010
Govinda Rao Bhisetti	12/06/2010
Kevin M. Cottrell	12/06/2010
Valerie Marone	01/20/2011

RECEIVING PARTY DATA

Name:	Vertex Pharmaceuticals Incorporated
Street Address:	130 Waverly Street
City:	Cambridge
State/Country:	MASSACHUSETTS
Postal Code:	02139

PATENT

REEL: 029364 FRAME: 0436

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13678854

CORRESPONDENCE DATA

Fax Number: 6173416483

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Phone: 617-961-8459

Email: Frances_Cunningham@vrtx.com

Correspondent Name: Vertex Pharmaceuticals Incorporated

Address Line 1: 130 Waverly Street

Address Line 4: Cambridge, MASSACHUSETTS 02139

ATTORNEY DOCKET NUMBER:	VIRO-165 US CN1
NAME OF SUBMITTER:	Frances M. Cunningham

Total Attachments: 75

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PATENT

REEL: 029364 FRAME: 0437

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> PATENT REEL: 029364 FRAME: 0438

ASSIGNMENT

We,

- (1) James A. Henderson, of Cambridge, MA;
- (2) John Maxwell, of Hingham, MA;
- (3) Louis Vaillancourt, of Mascouche, Quebec, Canada;
- (4) Mark Morris, of Somerville, MA;
- (5) Ronald Grey Jr., of Attleboro, MA;
- (6) Simon Giroux, of Cambridge, MA;
- (7) Laval Chan Chun Kong, of Kirkland, Quebec, Canada;
- (8) Sanjoy Kumar Das, of Pierrefonds, Quebec, Canada;
- (9) Bingcan Liu, of Laval, Quebec, Canada;
- (10) Carl Poisson, of Montreal, Quebec, Canada;
- (11) Caroline Cadilhac, of Montreal, Quebec, Canada;
- (12) Monica Bubenik, of Mascouche, Quebec, Canada;
- (13) T. Jagadeeswar Reddy, of Pierrefonds, Quebec, Canada;
- (14) Guy Falardeau, of Laval, Quebec, Canada;
- (15) Constantin Yannopoulos, of Notre-Dame de l'Ile Perrot, Canada;
- (16) Jian Wang, of Newton, MA;
- (17) Oswy Z. Pereira, of Kirkland, Quebec, Canada;
- (18) Youssef L. Bennani, of Boston, MA;
- (19) Albert C. Pierce, of Cambridge, MA;
- (20) Govinda Rao Bhisetti, of Lexington, MA;
- (21) Kevin M. Cottrell, of Cambridge, MA; and
- (22) Valerie Marone, of Somerville, MA 02143

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 my/our inventions, and discoveries disclosed in:
- (a) the application for United States Letters Patent entitled: <u>BENZIMIDAZOLE</u> <u>ANALOGUES FOR THE TREATMENT OR PREVENTION OF FLAVIVIRUS</u>

 <u>INFECTIONS</u>, and filed in the United States Patent and Trademark Office on <u>7/16/2010</u>, under Application Number <u>12/838350</u>¹, including any renewals, revivals, reissues, reexaminations, extensions, continuations, and divisions thereof, and any substitute applications therefor, and/or
- (b) the International Patent Application entitled: , filed under the Patent Cooperation Treaty in the United States Receiving Office on , of

, under Application No. ², 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 my/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

¹ We authorize and request ASSIGNEE to insert the filing date and/or application number of said application when known.

² I/We authorize and request ASSIGNEE to insert the filing date and/or application number of said application when known.

and to the above inventions, discoveries and applications including, but not limited to, the following priority application(s):

61/226152	United States of America	7/16/2009
61/317017	United States of America	3/24/2010
Application No.	Country	Filing Date

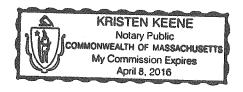
and all rights of priority in any country of the world deriving from the above-identified International Patent Application.

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 me/us had this assignment, sale and transfer not been made.

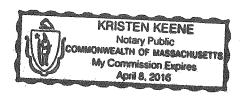
We agree, at any time, upon the request of the ASSIGNEE to execute and to deliver to the ASSIGNEE any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents of confirmation, registration and importation based on any Letters 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.

· · · · · · · · · · · · · · · · · · ·	12/3/2010
_	Jama Herderen
	(1) JAMES A. HENDERSON
Commonwealth of Massachusetts	
County of Middlesex	
On this <u>3rd</u> day of <u>Decembe</u> , 2010, before	e me, the undersigned notary public, personally
appeared / , proved to me through satisf	factory 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 a	re truthful and accurate to the best of his/her
knowledge and belief.	
Kruster Deire	
Notary Public	
My Commission Expires: 4/8/2016.	
7 /	



<i>-</i>	Dec 14h 22010
	Jona
	(2) John Maxwell
Commonwealth of Massachusetts	
County of Middles ex	
On this 14th day of December, 2010, before me, the	ne undersigned notary public, personally
appeared , proved to me through satisfactory	
was/were: personal knowledge of identity, a drive	
, to be the person whose name is signed	
affirmed to me that the contents of the document are trut	
snowledge and belief.	
KNOTELA KOLIE	
Notary Public	
My Commission Expires: 4/6/20/6.	



· ·	
	(3) Louis Vaillancourt
IN WITNESS WHEREOF, I have hereunto set h	and and seal
Signature of witness:	
Printed Name of Witness:	
this day of Date of signing	
IN WITNESS WHEREOF, I have hereunto set h	and and seal
Signature of witness:	
Printed Name of Witness:	
this day of	

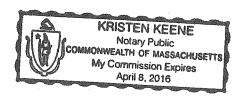
Jan 4, 201	
Moh flores	
(4) Mark Morris	
Commonwealth of Massachusetts	
County of Middlesex 2011	
On this day of <u>January</u> , 2010, before me, the undersigned notary public, personal	1y
appeared , proved to me through satisfactory evidence of identification which	
was/were: personal knowledge of 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.	
Mister Klere	
Notary Public	
My Commission Expires: 4/8/2011.	



	12/09/2010
	Round Dan
	(5) Ronald Grey Jr.
Commonwealth of Massachusetts	
County of MiddleSeX	
	re me, the undersigned notary public, personally
	sfactory evidence of identification which
was/were: personal knowledge of identity,	
<u> </u>	s signed on this document, and who swore or
affirmed to me that the contents of the document	
knowledge and belief.	
WW.Tex More	
Notary Public	
My Commission Expires: 4/8/20/6	



_	12/03/2010
	Sein herry
	(6) Simon Giroux
Commonwealth of Massachusetts	
County of Middlesex	
On this 3rd day of December, 2010, before	re me, the undersigned notary public, personally
	sfactory evidence of identification which
, to be the person whose name is	s signed on this document, and who swore or
affirmed to me that the contents of the document	
knowledge and belief.	
Klister Webe	· ·
Notary Public	
My Commission Expires: # 10/11/4	•



	(7) Laval Chan Chun Kong
IN WITNESS WHEREOF, I have hereunto	set hand and seal
Signature of witness:	
Printed Name of Witness:	· · · · · · · · · · · · · · · · · · ·
this day of	
Date of signing	
IN WITNESS WHEREOF, I have hereunto	set hand and seal
Signature of witness:	
Printed Name of Witness:	· · · · · · · · · · · · · · · · · · ·
this day of	

At	ty. Dkt. No. 09.7546-0112 / VIRO-165-US
	(8) Sanjoy Kumar Das
IN WITNESS WHEREOF, I have hereunto set hand and	d seal
Signature of witness:	<u> </u>
Printed Name of Witness:	·
this day of	
Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand and	d seal
Signature of witness:	
Printed Name of Witness:	
this day of	

Atty.	Dkt.	No.	097546-0112	Γ	VIRO-	165-US

	(9) Bingcan Liu
IN WITNESS WHEREOF, I have hereunto set hand and seal	
Signature of witness:	_
Printed Name of Witness:	
thisday of	
Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand and seal	
Signature of witness:	
Printed Name of Witness:	_
thisday of	
Date of signing	

· · · · · · · · · · · · · · · · · · ·	(10) Carl Poisson
IN WITNESS WHEREOF, I have hereunto set hand and seal	(10) Carri Oisson
in with Los will reof, thave hereumo set hand and sear	
Signature of witness:	
Printed Name of Witness:	
	-
this day of	
Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand and seal	
Signature of witness:	•
Drinted Name of Witness	
Printed Name of Witness:	-
this day of	
<u> </u>	

Page 13 of 25

Atty.	Dkt. No. 097546-0112 / VIRO-165-US
· ·	
	(11) Caroline Cadilhac
IN WITNESS WHEREOF, I have hereunto set hand and set	eal
Signature of witness:	
Printed Name of Witness:	<u></u>
this day of Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand and s	eal
Signature of witness:	·
Printed Name of Witness:	
this day of	

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
-	
	(12) Monica Bubenik
IN WITNESS WHEREOF, I have hereunto set ha	nd and seal
Signature of witness:	
Printed Name of Witness:	<u>. </u>
this day of Date of signing	
Date of signing	
IN WITNESS WHEREOF, I have hereunto set ha	nd and seal
Signature of witness:	
Printed Name of Witness:	·
this day of	
Date of signing	

	Auy. Dkt. No. 097340-01127 VIRO-103-03
	(13) T. Jagadeeswar Reddy
IN WITNESS WHEREOF, I have hereunto set h	nand and seal
Signature of witness:	
Printed Name of Witness:	
this day of Date of signing	
Date of signing	
IN WITNESS WHEREOF, I have hereunto set h	nand and seal
Signature of witness:	
Printed Name of Witness:	
this day of	

	(14) Guy Falardeau
IN WITNESS WHEREOF, I have hereunto set h	nand and seal
Signature of witness:	
Printed Name of Witness:	·
this day of Date of signing	
IN WITNESS WHEREOF, I have hereunto set h	nand and seal
Signature of witness:	<u></u>
Printed Name of Witness:	· .
this day of	

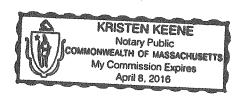
	Atty. Dkt. No. 097546-0112 / VIRO-165-US
<u></u>	
	(15) Constantin Yannopoulos
IN WITNESS WHEREOF, I have hereunto set hand	and seal
Signature of witness:	· .
Printed Name of Witness:	
this day of Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand	and seal
Signature of witness:	
Printed Name of Witness:	
this day of Date of signing	

	07/2010
4 mental and a second a second and a second	s V some
	(16) Jian Wang
Commonwealth of Massachusetts	
County of <u>Middlesex</u>	
On this day of <u>December</u> , 2010, before me, the u	indersigned notary public, personally
appeared, proved to me through satisfactory evi	
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	l and accurate to the best of his/her
knowledge and belief.	
Notary Public	
My Commission Expires: 4/8/20/6.	



. ————————————————————————————————————	(17) Oswy Z. Pereira	
IN WITNESS WHEREOF, I have hereunto set hand and seal		
Signature of witness:	<u> </u>	
Printed Name of Witness:		
this day of Date of signing		
IN WITNESS WHEREOF, I have hereunto set hand and seal		
Signature of witness:	_	
Printed Name of Witness:		
this day of		

Atty. Dkt. No. 097546-0112 / VIRO-165-US
T. Bennam'
12/3/2010
(18) Youssef L. Bennani
Commonwealth of Massachusetts
County of Middlesex
On this day of day of 2010, before me, the undersigned notary public, personally appeared, 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: $\frac{4/8}{20/10}$.



	Vec. 6, 2010
	Allegt Ben
	(19) Albert C. Pierce
Commonwealth of Massachusetts	
County of <u>Middlesex</u>	
	fore me, the undersigned notary public, personally
appeared, proved to me through sa	atisfactory evidence of identification which
was/were: 🗹 personal knowledge of identity,	a driver's license, other (please identify)
, to be the person whose nam	e is signed on this document, and who swore or
affirmed to me that the contents of the docume	ent are truthful and accurate to the best of his/her
mowledge and belief.	
Klister Bleke	
Notary Public	
My Commission Expires: 4/8/2016	



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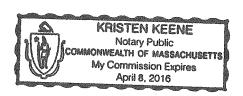
2010
Cu Rus Bhisetti

(20) Govinda Rao Bhisetti

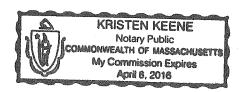
Commonwealth of Massachusetts
County of Middless ex

Notary Public

My Commission Expires: 4/8/2016.



	Atty. Dkt. No. 097546-0112 / VIRO-165-US
	12/6/16
· · · · · · · · · · · · · · · · · · ·	
	(21) Kevin M. Cottrell
Commonwealth of Massachusetts	
County of MiddleSex	
On this 6th day of December, 2010, befor	e me, the undersigned notary public, personally
appeared , proved to me through satisf	factory evidence of identification which
was/were: personal knowledge of identity,	a driver's license, other (please identify)
, to be the person whose name is	s signed on this document, and who swore or
affirmed to me that the contents of the document	
knowledge and belief.	
Willsten Dere	
Notary Public	
My Commission Expires: 4/8/20/6.	



Atty.	Dkt. No. 097546-0112 / VIRO-165-US
	(22) Valerie Marone
IN WITNESS WHEREOF, I have hereunto set hand and se	eal
Signature of witness:	
Printed Name of Witness:	·
this day of Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand and se	eal
Signature of witness:	
Printed Name of Witness:	·
this day of	

ASSIGNMENT

We,

- (1) James A. Henderson, of Cambridge, MA;
- (2) John Maxwell, of Hingham, MA;
- (3) Louis Vaillancourt, of Mascouche, Quebec, Canada;
- (4) Mark Morris, of Somerville, MA;
- (5) Ronald Grey Jr., of Attleboro, MA;
- (6) Simon Giroux, of Cambridge, MA;
- (7) Laval Chan Chun Kong, of Kirkland, Quebec, Canada;
- (8) Sanjoy Kumar Das, of Pierrefonds, Quebec, Canada;
- (9) Bingcan Liu, of Laval, Quebec, Canada;
- (10) Carl Poisson, of Montreal, Quebec, Canada;
- (11) Caroline Cadilhac, of Montreal, Quebec, Canada;
- (12) Monica Bubenik, of Mascouche, Quebec, Canada;
- (13) T. Jagadeeswar Reddy, of Pierrefonds, Quebec, Canada;
- (14) Guy Falardeau, of Laval, Quebec, Canada;
- (15) Constantin Yannopoulos, of Notre-Dame de l'Ile Perrot, Canada;
- (16) Jian Wang, of Newton, MA;
- (17) Oswy Z. Pereira, of Kirkland, Quebec, Canada;
- (18) Youssef L. Bennani, of Boston, MA;
- (19) Albert C. Pierce, of Cambridge, MA;
- (20) Govinda Rao Bhisetti, of Lexington, MA;
- (21) Kevin M. Cottrell, of Cambridge, MA; and
- (22) Valerie Marone, of Somerville, MA 02143

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

Page 1 of 25

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 my/our inventions, and discoveries disclosed in:
- (a) the application for United States Letters Patent entitled: <u>BENZIMIDAZOLE</u>

 <u>ANALOGUES FOR THE TREATMENT OR PREVENTION OF FLAVIVIRUS INFECTIONS</u>, and filed in the United States Patent and Trademark Office on <u>7/16/2010</u>, under Application

 Number <u>12/838350</u>¹, including any renewals, revivals, reissues, reexaminations, extensions, continuations, and divisions thereof, and any substitute applications therefor, and/or
- (b) the International Patent Application entitled: , filed under the Patent Cooperation Treaty in the United States Receiving Office on , of .

, under Application No. ², 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 my/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

¹ We authorize and request ASSIGNEE to insert the filing date and/or application number of said application when known.

² I/We authorize and request ASSIGNEE to insert the filing date and/or application number of said application when known.

and to the above inventions, discoveries and applications including, but not limited to, the following priority application(s):

61/226152	United States of America	7/16/2009
61/317017	United States of America	3/24/2010
Application No.	Country	Filing Date

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 me/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.

Page 3 of 25

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	(1) JAMES A. HENDERSON
Commonwealth of Massachusetts	、
County of	
On this day of , 2010, before	e me, the undersigned notary public, personally
appeared , proved to me through satisf	factory evidence of identification which
was/were: personal knowledge of identity,	a driver's license, other (please identify)
, to be the person whose name is	s signed on this document, and who swore or
affirmed to me that the contents of the document a	are truthful and accurate to the best of his/her
knowledge and belief.	
· ·	
Notary Public	
My Commission Expires:	

	(2) John Maxwell
Commonwealth of Massachusetts	,
County of	
On this, 2010, before	ore me, the undersigned notary public, personally
appeared , proved to me through sat	isfactory 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 documen	at are truthful and accurate to the best of his/her
knowledge and belief.	
Notary Public	
My Commission Expires:	

F	Miy. Dki. No. 09/346-0112/ VIRO-165-03
	(3) Louis Vaillancourt
IN WITNESS WHEREOF, I have hereunto set hand an	nd seal
Signature of witness:	
Printed Name of Witness:	
this day of Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand an	nd seal
Signature of witness:	
Printed Name of Witness:	
thisday of	
Date of signing	

	(4) Mark Morris
Commonwealth of Massachusetts	(1)
County of	
On this day of , 2010, before	ore me, the undersigned notary public, personally
	isfactory evidence of identification which
was/were: personal knowledge of identity,	a driver's license, other (please identify)
	is signed on this document, and who swore or
affirmed to me that the contents of the documen	- · · · · · · · · · · · · · · · · · · ·
knowledge and belief.	
· · ·	
Notary Public	
My Commission Expires:	

	(5) Ronald Grey Jr.
Commonwealth of Massachusetts	
County of	
On this day of , 2010, before	ore me, the undersigned notary public, personally
	isfactory 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 documen	
knowledge and belief.	
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Notary Public	
My Commission Expires:	

·
(6) Simon Giroux
e undersigned notary public, personally evidence of identification which c's license, other (please identify) on this document, and who swore or
aful and accurate to the best of his/her

	Atty. Dkt. No. 09/546-0112 / VIR	O-165-US
		:
	(7) Laval Chan Chun Kong	
IN WITNESS WHEREOF, I have hereunto set hand	and seal	
Signature of witness:		
Printed Name of Witness:		
this day of		
Date of signing		
IN WITNESS WHEREOF, I have hereunto set hand	and seal	
Signature of witness:		
Printed Name of Witness:		
this day of		
Date of signing		

Atty. D	0kt. No. 097546-0112 / VII	RO-165-US
		:
	(8) Sanjoy Kumar Das	
IN WITNESS WHEREOF, I have hereunto set hand and seal		
Signature of witness:		
Printed Name of Witness:		
this day of		
Date of signing		
IN WITNESS WHEREOF, I have hereunto set hand and seal		
Signature of witness		
Signature of witness:		
Printed Name of Witness:		
Alia Anna C		
this day of		

Page 11 of 25

IN WITNESS WHEREOF, I have hereunto set hand and seal	(9) Bingcan Liu	
Signature of witness:		
Printed Name of Witness:	- -	
thisday of		
Date of signing		
IN WITNESS WHEREOF, I have hereunto set hand and seal		
Signature of witness:		
Printed Name of Witness:	-	
this day of		

Page 12 of 25

		:	
	(10) C 1 D '		
IN WITNESS WHEREOF, I have hereunto set hand and seal	(10) Carl Poisson		
Signature of witness:			
Printed Name of Witness:			
-			
this day of			
Date of signing			
IN WITNESS WHEREOF, I have hereunto set hand and seal			
Signature of witness:			
Printed Name of Witness:			

Date of signing

this ____ day of _____.

Att	y. Dkt. No. 097546-0112 / VIRO-165-US
	· .
	(11) Caroline Cadilhac
IN WITNESS WHEREOF, I have hereunto set hand and	seal
Signature of witness:	<u> </u>
Printed Name of Witness:	·
this day of Date of signing	
Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand and	seal
Signature of witness:	
Printed Name of Witness:	
this day of	
Date of signing	

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
· 	(12) M' D 1'1
	(12) Monica Bubenik
IN WITNESS WHEREOF, I have hereunto set hand a	nd seal
Signature of witness:	
Printed Name of Witness:	·
this day of Date of signing	
Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand a	nd seal
Signature of witness:	
Printed Name of Witness:	
this day of Date of signing	
Date of signing	

	Atty. Dkt. No. 09'	7546-0112 / VIRO-16:	5-US
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	(12) T. I	-1	
	(13) 1. Jag	adeeswar Reddy	
IN WITNESS WHEREOF, I have hereunto set han	d and seal		
Signature of witness:			-
Printed Name of Witness:			
this day of Date of signing			
	•		
IN WITNESS WHEREOF, I have hereunto set han	d and seal		
Signature of witness:			
Printed Name of Witness:			
this day of Date of signing			
Date of signing			

Att	ty. Dkt. No. 097546-0112 / VIRO-165-US
	· · · · · · · · · · · · · · · · · · ·
	(14) Guy Falardeau
IN WITNESS WHEREOF, I have hereunto set hand and	seal
Signature of witness:	
Printed Name of Witness:	<u></u>
this day of Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand and	seal
Signature of witness:	·
Printed Name of Witness:	
this day of	

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
·	
	(15) Constantin Yannopoulos
IN WITNESS WHEREOF, I have hereunto set hand	and seal
Signature of witness:	·
Printed Name of Witness:	·
this day of Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand	and seal
Signature of witness:	<u></u>
Printed Name of Witness:	
this day of	
Date of signing	

	(16) Jian Wang
Commonwealth of Massachusetts	· ,
County of	
On this day of, 2010, be	efore me, the undersigned notary public, personally
appeared , proved to me through s	atisfactory evidence of identification which
was/were: personal knowledge of identity,	a driver's license, other (please identify)
, to be the person whose nan	ne is signed on this document, and who swore or
affirmed to me that the contents of the document	ent are truthful and accurate to the best of his/her
knowledge and belief.	
Notary Public	
My Commission Expires:	

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
	(17) Oswy Z. Pereira
IN WITNESS WHEREOF, I have hereunto set hand an	nd seal
Signature of witness:	
Printed Name of Witness:	·
this day of Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand as	nd seal
Signature of witness:	·
Printed Name of Witness:	
this day of	
Date of signing	

	(18) Youssef L. Bennani
Commonwealth of Massachu	
County of	
On this day of	, 2010, before me, the undersigned notary public, personally
appeared , prove	o me through satisfactory evidence of identification which
was/were: personal know	dge of identity, a driver's license, other (please identify)
	son whose name is signed on this document, and who swore or
	s of the document are truthful and accurate to the best of his/her
knowledge and belief.	
Notary Public	
My Commission Expires:	•

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
	(19) Albert C. Pierce
Commonwealth of Massachusetts	
County of	
appeared , proved to me through sa was/were: personal knowledge of identity,	fore me, the undersigned notary public, personally utisfactory evidence of identification which a driver's license, other (please identify) e is signed on this document, and who swore or
	ent are truthful and accurate to the best of his/her
knowledge and belief.	·
Notary Public	
My Commission Expires: .	

	(20) Govinda Rao Bhisetti
Commonwealth of Massachusetts	
County of	
On this day of , 2010, bef	fore me, the undersigned notary public, personally
	tisfactory evidence of identification which
	a driver's license, other (please identify)
	e is signed on this document, and who swore or
	nt are truthful and accurate to the best of his/her
knowledge and belief.	
Mic Weage and Conci.	
Notary Public	
My Commission Expires: .	

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	(21) Kevin M. Cottrell	
Commonwealth of Massachusetts	, ,	
County of		
On this day of, 2010, befor	re me, the undersigned notary public, personally	
appeared , proved to me through satis	factory evidence of identification which	
was/were: personal knowledge of identity,	a driver's license, other (please identify)	
to be the person whose name is	s 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:		

IN WITNESS WHEREOF, I have hereunto set hand and seal		
Signature of witness: Wough Lagron		
Printed Name of Witness: World Gagnon		
this 2ϕ day of $3\phi 2\phi 1$. Date of signing		
IN WITNESS WHEREOF, I have hereunto set hand and seal		
Signature of witness: EUU B HOLF		
Printed Name of Witness: Elise B Holf		
this 20 day of January 2011.		

ASSIGNMENT

We,

- (1) James A. Henderson, of Cambridge, MA;
- (2) John Maxwell, of Hingham, MA;
- (3) Louis Vaillancourt, of Mascouche, Quebec, Canada;
- (4) Mark Morris, of Somerville, MA;
- (5) Ronald Grey Jr., of Attleboro, MA;
- (6) Simon Giroux, of Cambridge, MA;
- (7) Laval Chan Chun Kong, of Kirkland, Quebec, Canada;
- (8) Sanjoy Kumar Das, of Pierrefonds, Quebec, Canada;
- (9) Bingcan Liu, of Montreal, Quebec, Canada;
- (10) Carl Poisson, of Montreal, Quebec, Canada;
- (11) Caroline Cadilhac, of Montreal, Quebec, Canada;
- (12) Monica Bubenik, of Mascouche, Quebec, Canada;
- (13) T. Jagadeeswar Reddy, of Pierrefonds, Quebec, Canada;
- (14) Guy Falardeau, of Laval, Quebec, Canada;
- (15) Constantin Yannopoulos, of Notre-Dame de l'Ile Perrot, Quebec, Canada;
- (16) Jian Wang, of Newton, MA;
- (17) Oswy Z. Pereira, of Kirkland, Quebec, Canada;
- (18) Youssef L. Bennani, of Boston, MA;
- (19) Albert C. Pierce, of Cambridge, MA;
- (20) Govinda Rao Bhisetti, of Lexington, MA;
- (21) Kevin M. Cottrell, of Cambridge, MA; and
- (22) Valerie Marone, of Somerville, MA 02143

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 my/our inventions, and discoveries disclosed in:
- (a) the application for United States Letters Patent entitled: <u>BENZIMIDAZOLE</u>

 <u>ANALOGUES FOR THE TREATMENT OR PREVENTION OF FLAVIVIRUS INFECTIONS</u>, and filed in the United States Patent and Trademark Office on <u>7/16/2010</u>, under Application

 Number <u>12/838350</u>¹, including any renewals, revivals, reissues, reexaminations, extensions, continuations, and divisions thereof, and any substitute applications therefor, and/or
- (b) the International Patent Application entitled: , filed under the Patent Cooperation Treaty in the United States Receiving Office on , of ;
- , under Application No. ², 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 my/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

¹ We authorize and request ASSIGNEE to insert the filing date and/or application number of said application when known.

 $^{^2}$ I/We authorize and request ASSIGNEE to insert the filing date and/or application number of said application when known.

and to the above inventions, discoveries and applications including, but not limited to, the following priority application(s):

61/226152	United States of America	7/16/2009	
61/317017	United States of America	3/24/2010	
Application No.	Country	Filing Date	

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 me/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.

Page 3 of 25

		(1) JAMES A. HENDERSON
Commonwe	alth of Massachusett	S
County of		
On this	day of	, 2010, before me, the undersigned notary public, personally
appeared	, proved to	me through satisfactory evidence of identification which
was/were:] personal knowledg	ge of identity, a driver's license, other (please identify)
	, to be the perso	on whose name is signed on this document, and who swore or
affirmed to 1	me that the contents	of the document are truthful and accurate to the best of his/her
knowledge a	and belief.	
Notary Publ	ic	
My Commis	ssion Expires:	•

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
	(2) John Maxwell
Commonwealth of Massachusetts	` ,
County of	
On this, 2010, be	fore me, the undersigned notary public, personally
- 1	atisfactory evidence of identification which
1	a driver's license, other (please identify)
, to be the person whose nam	e is signed on this document, and who swore or
affirmed to me that the contents of the docume	ent are truthful and accurate to the best of his/her
knowledge and belief.	
Notary Public	
My Commission Expires:	

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
<u>-</u>	/3/12/2010 (3) Louis Vaillancourt
IN WITNESS WHEREOF, I have hereunto set har Signature of witness: Printed Name of Witness: this 3 day of Date of signing	THÉRÈSE GODBOUT 165 297 POUR TOUS LES DISTRICTANTES DISTRICTANTS DISTR
IN WITNESS WHEREOF, I have hereunto set har Signature of witness: Printed Name of Witness: SYLVIE OF Date of signing	ellest Sellest

		to the book and the book of th
		(4) Mark Morris
Commonwealth of Mas	sachusetts	、 ,
County of		
On this day of	of , 2010, be	efore me, the undersigned notary public, personally
appeared , p	proved to me through s	atisfactory evidence of identification which
	knowledge of identity,	a driver's license, other (please identify)
to be	the person whose nan	ne is signed on this document, and who swore or
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knowledge and belief.		
C		
Notary Public		
My Commission Expire	es:	

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
	(5) Ronald Grey Jr.
Commonwealth of Massachusetts	
County of	
On this, 2010, b	efore me, the undersigned notary public, personally
appeared , proved to me through s	satisfactory evidence of identification which
was/were: personal knowledge of identity,	, a driver's license, other (please identify)
, to be the person whose nan	ne is signed on this document, and who swore or
	ent are truthful and accurate to the best of his/her
knowledge and belief.	
Notary Public	
My Commission Expires:	

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
	(6) Simon Giroux
Commonwealth of Massachusetts	· ·
County of	
On this day of, 2010, before	ore me, the undersigned notary public, personally
appeared , proved to me through sat	isfactory 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 documen	t are truthful and accurate to the best of his/her
knowledge and belief.	
Notary Public	
My Commission Expires:	

Vecember (3, 2010 (7) Laval Chan Chun Kong

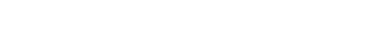
IN WITNESS WHEREOF, I have hereunto set hand and seal

Signature of witness:

Printed Name of Witness: THERESE GONBOW

this 13 day of Janker De 10.

Date of signing



Signature of witness: Mul Cullum

IN WITNESS WHEREOF, I have hereunto set hand and seal

Printed Name of Witness: SYLVIE OVELLET

this 13 day of December 2010.

At	ty. Dkt. N	lo. 09754	6-0112 /	VIRO-165	5-US
· 4					

Scurjog Kumar Das-December 13, 2010

(8) Sanjoy Kumar Das

IN WITNESS WHEREOF, I have hereunto set hand and seal

Signature of witness:

Printed Name of Witness: THERESE GODBOU

this 13 day of December 2010



Date of signing

IN WITNESS WHEREOF, I have hereunto set hand and seal

Signature of witness: Will Wellew

Printed Name of Witness: SYLVIE OVELLET

this 18 day of December 2010.

Atty. Dkt. No	. 097546-0112 /	VIRO-165-US
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Date of signing

IN WITNESS WHEREOF, I have hereunto set hand and seal

Signature of witness:

Date of signing

IN WITNESS WHEREOF, I have hereunto set hand and seal

Signature of witness:

Date of witness:

Printed Name of Witness:

Date of Witness:

Date of Signing

IN WITNESS WHEREOF, I have hereunto set hand and seal

Signature of witness:

Printed Name of Witness:

Date Of Witness:

Atty. Dkt. No. 097546-0112 / VIRO-165-US
Call Passen
Decem Be 14, 2010
(10) Carl Poisson
IN WITNESS WHEREOF, I have hereunto set hand and seal
Signature of witness:
THÉ PÈCE
Printed Name of Witness: THERESE GODBOUT GODBOUT
this B day of December 2010.
Date of signing
IN WITNESS WHEREOF, I have hereunto set hand and seal
Signature of witness: Mul Cullul
Callant Bartes T
Printed Name of Witness: SYLVIE OVELLET
this 13 day of December 2010.

Atty. Dkt. No.	097546-0112 /	VIRO-165-US
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Fat-lhac

14 Dec 2010 (11) Caroline Cadilhac

IN WITNESS WHEREOF, I have hereunto set hand and seal	SEAL'ASS
Signature of witness:	THÉRÈS
Printed Name of Witness: SHERESE GODBAUT	165 29
this May of Desember Do 10.	TOUS LES
Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand and seal	
Signature of witness: Will Ullell	,
Printed Name of Witness: SYLVIE OVELLET	
this 18 day of December 2010. Date of signing	
Date of Signing	

(12) Monica Bubenik

IN WITNESS WHEREOF, I have hereunto set hand and seal
Signature of witness:
Printed Name of Witness: THERESE 40D BOUT
this 13 day of December 2010.
Date of signing
IN WITNESS WHEREOF, I have hereunto set hand and seal
Signature of witness: Mul Chille
Printed Name of Witness: SYLVIE OVELLET
this 13 day of December 2010.
Date of signing

13 Dec 2010

	FAOOLY	
(13)	Γ. Jagadeeswar Reddy	
IN WITNESS WHEREOF, I have hereunto set hand and seal Signature of witness: Printed Name of Witness: Date of signing	THÉRÈSE GODBOUT 165 297 POUR TOUS LES WOICIAIRES QUI	
IN WITNESS WHEREOF, I have hereunto set hand and seal Signature of witness: Printed Name of Witness: SYLVE OVEUET this 13 day of Delimer 2010. Date of signing		

A	tty. Dkt. No. 097/546-0112 / VIRO-165-US
	Haladam
	2010/12/13
	(14) Guy Falardeau
IN WITNESS WHEREOF, I have hereunto set hand an	d seal
Signature of witness:	THÉ DÈ CE SI
Printed Name of Witness: THERESE GODBO	GODBOUT GODBOUT 165 297
this 13 day of Sesenfer 2010.	POUR TOUS LES
Date of signing	DO THE PORT OF THE PART OF THE
IN WITNESS WHEREOF, I have hereunto set hand an	d seal
Signature of witness: Mul Mullu	<u>/</u>
Printed Name of Witness: SYLVIE OVELLE	

this 15 day of Deely was 2010.

Date of signing

Atty. Dkt. No. 09/546-0112 / VIRO-165-US
2010/12/13
(15) Constantin Yannopoulos

Signature of witness:

Printed Name of Witness:

Date of signing

IN WITNESS WHEREOF, I have hereunto set hand and seal

Signature of witness:

Printed Name of Witness:

Signature of witness:

Printed Name of Witness:

Printed Name of Witness:

Sylvie Overlief

this S day of Declume 2010.

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
	(16) I' III
Commonwealth of Massachusetts	(16) Jian Wang
County of	Conserve the rendensioned notons myhlic mongonally.
	ore me, the undersigned notary public, personally
	tisfactory evidence of identification which
was/were: personal knowledge of identity, [
-	e is signed on this document, and who swore or
affirmed to me that the contents of the documer	nt are truthful and accurate to the best of his/her
knowledge and belief.	
Notary Public	
My Commission Expires:	

Atty. Dkt. No.	097546-0112 /	VIRO-165-US
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	(17) Oswy Z. Pereira
IN WITNESS WHEREOF, I have hereunto set hand and seal	
Signature of witness:	S THE
Printed Name of Witness: THERESE GODBOU	GOD 165
this 13 day of Locanfer 3010 Date of signing	101 101 101
IN WITNESS WHEREOF, I have hereunto set hand and seal	
Signature of witness: Mel Clellel	_
Printed Name of Witness: SYLVIE OVEUET	
this 3 day of December 2010.	

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
	(18) Youssef L. Bennani
Commonwealth of Massachusetts	
County of	
On this day of, 2010, before	ore me, the undersigned notary public, personally
appeared , proved to me through sati	sfactory 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	t are truthful and accurate to the best of his/her
knowledge and belief.	
Notary Public	
My Commission Expires:	

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
	(19) Albert C. Pierce
Commonwealth of Massachusetts	
County of	
appeared , proved to me through s was/were: personal knowledge of identity,	efore me, the undersigned notary public, personally satisfactory evidence of identification which a driver's license, other (please identify) ne is signed on this document, and who swore or
affirmed to me that the contents of the docum	ent are truthful and accurate to the best of his/her
knowledge and belief.	
Notary Public	
My Commission Expires:	

-	***************************************
_	(20) Govinda Rao Bhisetti
Commonwealth of Massachusetts	(= 0) = 0 = 1 = 1 = 1 = 1 = 1
County of	
On this day of , 2010, before	e me, the undersigned notary public, personally
appeared , proved to me through satist	factory evidence of identification which
was/were: personal knowledge of identity,	a driver's license, other (please identify)
, to be the person whose name is	s 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:	

	The second secon
	(21) Kevin M. Cottrell
Commonwealth of Massachusetts	
County of	
	fore me, the undersigned notary public, personally
	atisfactory evidence of identification which
was/were: personal knowledge of identity,	a driver's license, other (please identify)
, to be the person whose nam	e is signed on this document, and who swore or
	nt are truthful and accurate to the best of his/her
knowledge and belief.	
č	
Notary Public	
My Commission Expires: .	

	Atty. Dkt. No. 097546-0112 / VIRO-165-US
	(22) Valerie Marone
IN WITNESS WHEREOF, I have hereunto set hand a	nd seal
Signature of witness:	
Printed Name of Witness:	
this day of Date of signing	
IN WITNESS WHEREOF, I have hereunto set hand a	and seal
Signature of witness:	
Printed Name of Witness:	
this day of Date of signing	
Date of Signing	

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RECORDED: 11/28/2012

PATENT REEL: 029364 FRAME: 0513