502584088 11/26/2013

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
BROOKE EMERLING	10/17/2013
ATSUO SASAKI	10/23/2013
LEWIS C. CANTLEY	10/17/2013
JONATHAN HUROV	10/21/2013

RECEIVING PARTY DATA

Name:	BETH ISRAEL DEACONESS MEDICAL CENTER, INC.
Street Address:	330 BROOKLINE AVENUE
City:	BOSTON
State/Country:	MASSACHUSETTS
Postal Code:	02215

PROPERTY NUMBERS Total: 3

Property Type	Number
Application Number:	61442622
Application Number:	13985462
PCT Number:	US2012021266

CORRESPONDENCE DATA

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

Correspondent Name: KRISTINA BIEKER-BRADY, PH.D.

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Address Line 4: BOSTON, MASSACHUSETTS 02110

ATTORNEY DOCKET NUMBER: 01948-193002

PATENT

REEL: 031681 FRAME: 0703

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NAME OF SUBMITTER:	KRISTINA BIEKER-BRADY, PH.D.
Signature:	/Kristina Bieker-Brady, Ph.D./
Date:	11/26/2013
Total Attachments: 6 source=01948_193002_Assignment#page1 source=01948_193002_Assignment#page2 source=01948_193002_Assignment#page3 source=01948_193002_Assignment#page4 source=01948_193002_Assignment#page5 source=01948_193002_Assignment#page6	.tif .tif .tif .tif

PATENT REEL: 031681 FRAME: 0704

ASSIGNMENT

For valuable consideration, we,

Full Name of Assignor	City	State (and Country if not USA)
Brooke EMERLING	Boston	MA
Atsuo SASAKI	Newton	MA
Lewis C. CANTLEY	Cambridge	MA
Jonathan HUROV	Cambridge	-MA

hereby assign to

Full Name of Assignee	State of Incorporation	Business Address
Beth Israel Deaconess Medical Center, Inc.	MA	330 Brookline Avenue Boston, MA 02215

and to its successors and assigns (collectively hereinafter called "the Assignse"), the entire right, title, and interest throughout the world in the inventions and improvements which are subject of one or more applications for United States Patent signed by us, identified as:

Title of Application	Filing Date	Serial Number
MODULATION OF PHOSPHATIDYLINOSITOL-5- PHOSPHATE-4-KINASE ACTIVITY	February 14, 2011	61/442,622
MODULATION OF PHOSPHATIDYLINOSITOL-5- PHOSPHATE-4-KINASE ACTIVITY	August 14, 2013	13/985,462
MODULATION OF PHOSPHATIDYLINOSITOL-5- PHOSPHATE-4-KINASE ACTIVITY	January 13, 2012	PCT/US2012/021266

and we authorize and request the attorneys appointed in said application to hereafter complete this assignment by inserting above the filling date and serial number of said application when known; this assignment includes said application, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and the right to claim priority based on the filling date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all countries in our names or in its own name for patents, utility models, design registrations, and like rights of exclusion, and for inventors' certificates for said inventions and improvements; and we agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation, to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements, and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment. This assignment also includes the right to sue for past acts of infringement, whether based on any patents listed herein, patents issuing from applications listed herein, or provisional rights from any patent applications listed herein.

IN WITNESS WHEREOF, J-Hare	in pot my hond and pagi at	NEW YAKK. KIZI	/) York
this _17 day of	2013	/>	
Brooke EMERUNG	<u>sien</u>		L.S.
STATE OF LINEW YORK	· . ()		
COUNTY OF QUEENS	: SS.		
COUNTY OF CASE CASS			
CONSISTED OF THE PARTY OF	cknowledged that he/she exe	e, the undersigned notary public factory evidence of identification e the person whose name is su- cuted the same as his/her free	Daci inea to the
••	Notary Putylic	tright	
[Notary's Seal Here]	My Commission Expires:	Notary Public, 5	icKNIGHT tate of New York 05030259 ueene County

IN Witness Whereof I hereb	n set my hand and seal at		
In Witness Whereof, I heret	o set my hand and seal at		
thisday of	o set my hand and seal at 20		L.S.
Atsuo SASAKI	o set my hand and seal at , 20		
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Atsuo SASAKI STATE OF COUNTY OF day of Personally appeared Atsuo S/consisted of foregoing Assignment, and ac		efore me, the undersigned nota satisfactory evidence of identifi e the person whose name is sub	L.S. ry public, cation, which scribed to the

Page 2 of 3

aloud a series
IN WITNESS WHEREOE, Thereto set my hand and seal at this 2 day of 2013
L.S.
STATE OF NEW YORK:
COUNTY OF QUEENS: SS.
On this 2 day of October 203 before me, the undersigned notary public, personally appeared Lewis C. CANTLEY, proved to me through satisfactory evidence of identification, which consisted of Vork 10 person whose name is subscribed to the foregoing Assignment, and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.
10 real Makneght
[Notary's Seal Here] My Commission Expires: [Notary's Seal Here] TONYA McKNIGHT Notary Public, State of New York No. 01MC6030259 Gualified in Queens County Seal Commission Expires
IN WITNESS WHEREOF, I hereto set my hand and seal atCambridge, MA
STATE OF Massachusetts:
COUNTY OF Middlesox: :ss.
On this 21 day of
Lin Cein
Notary Public
[Notary's Seal Here] My Commission Expires: LISA CORMIER Notary Public COMMONWEALTH OF MASSACHUSETTS My Commission Expires September 7, 2018

PATENT REEL: 031681 FRAME: 0707

ASSIGNMENT

For valuable consideration, we,

Full Name of Assignor	CV	State (and Country if not USA)
Brooke EMERLING	Boston	walling the same of the same o
Atsuo SASAKI	Newton	INA
Lewis C. CANTLEY	Cambridge	TWA SEED CO.
Jonathan HUROV	Cambridge	I MA

hereby assign to

Full Name of Assignee	State of Incorporation	Business Address
Beth Israel Deaconess Medical	MA	330 Brookline Avenue
Center, Inc.		Boston, MA 02215

and to its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title, and interest throughout the world in the inventions and improvements which are subject of one or more applications for United States Patent signed by us, identified as:

Title of Application	Filing Date	Serial Number
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MODULATION OF PHOSPHATIDYLINOSITOL-5- PHOSPHATE-4-KINASE ACTIVITY	August 14, 2013	13/985,462
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and we authorize and request the attorneys appointed in said application to hereafter complete this assignment by inserting above the filing date and serial number of said application when known; this assignment includes said application, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes, and we authorize the Assignee to apply in all countries in our names or in its own name for patents, utility models, design registrations, and like rights of exclusion, and for inventors' certificates for said inventions and improvements; and we agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation, to perform such lawful acts and to sign such further applications, assignments. Preliminary Statements, and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment. This assignment also includes the right to sue for past acts of infringement, whether based on any patents listed herein, patents issuing from applications listed herein, or provisional rights from any patent applications listed herein.

Page 1 of 3

IN WITNESS WHEREOF, Thereto set my hand and	Isealar NE	WYOKN	ew Yolk
this 17 day of 2000 one			
Brooke EMERILING)			****
STATE OF FILEW YORK	U		
COUNTY OF Queens			
On this 17 day of 00 to bey 2012 appeared Brooke EMERLING, proved to me the consisted of Work ID Card oregoing Assignment, and acknowledged that the purposes therein contained.	ough satistactor to be the	y evidence of identific person whose name	ation, which s subscribed to the
	a Nesta	ight	
My Commissio	n Expires:	MORTA LTD	YA McKNIGHT lic, State of New York 01MC6030259 In Queens County 2 pires
N Wingess Whereof, I hereto set my hand and his 2 day of 0000 Berg	isealat <u>(() in</u> 102	cinnati,(<u>)/n; 0</u> .
MSUO SASAKI XA			
MATE OF OHIO			
COUNTY OF HAMILTON: SS.			
On this 23 day of 0000 BEP personally appeared Atsuo SASAKI, proved to consisted of DEVENS LICENSE pregoing Assignment, and acknowledged that the purposes therein contained.	me through satis to be the	factory evidence of id person whose name	entification, which is subscribed to the
Paine	l la portura		
Notary Public	<u> </u>	nimerijająca prawa storią.	
Paige Newman My Commissio	n Expires		
My Commission Expires 07-22-2018			

Page 2 of 3

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this / day of 664 / here!	io set my hand and sept at A/Cu	YAK, NEW YAK
< 9 <		1
Lewis-C:CANTLEY	4. 2	
STATE OF NEW YOU		
COUNTY OF QUAGNS	SS.	
On this Z day of personally appeared Lewis C which consisted of VOV to the foregoing Assignment, deed for the purposes therein	potabo 208 before me through sa to be and acknowledged that he/she execution contained.	e, the undersigned notary public, tisfactory evidence of identification, the person whose name is subscribed ited the same as his/her free act and
	Longo Makreg	<u>k</u>
(Notary's Seal Here)	My Commission Expires:	TONYA McKNIGHT Notary Public, State of New York No. 01MC6030259 Gualified in Queens County S Commission Expires
IN WITNESS WHEREOF, I heret	o set my hand and seal at	
Jonathan HUROV	internation to the construction and the state of the stat	the description of the contract of the contrac
STATE OF	nestation	
COUNTY OF	. \$\$.	
On this day of _ personally appeared Jonatha	, 20_, before min HUROV, proved to me through satir	e, the undersigned notary public, sfactory evidence of identification, which
consisted of	cknowledged that he/she executed the	rson whose name is subscribed to the e same as his/her free act and deed for
	Notary Public	
[Notary's Seal Here]	My Commission Expires:	

Page 3 of 3

PATENT REEL: 031681 FRAME: 0710

RECORDED: 11/26/2013