# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3589480

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
	Corrective Assignment to correct the PATENT NO. FROM 8726046 TO 8729046 previously recorded on Reel 036876 Frame 0018. Assignor(s) hereby confirms the CORRECTION FROM 8726046 TO 8729046.

## **CONVEYING PARTY DATA**

Name	Execution Date
ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY	09/09/2015

## **RECEIVING PARTY DATA**

Name:	COM AFFILIATION, INC.	
Street Address:	1300 MORRIS PARK AVENUE	
City:	BRONX	
State/Country:	NEW YORK	
Postal Code:	10461	

### **PROPERTY NUMBERS Total: 25**

Property Type	Number
Patent Number:	8729046
Patent Number:	8835467
Application Number:	13813163
Application Number:	13775312
PCT Number:	US1328160
Patent Number:	8859499
PCT Number:	US1330355
Application Number:	13803972
Patent Number:	8703496
Application Number:	13845324
Application Number:	13808495
Patent Number:	8716235
Application Number:	61813773
Application Number:	13884298
Application Number:	13885203
Application Number:	13991091
Application Number:	13912266
Application Number:	13979179
Application Number:	13985087

PATENT

REEL: 036984 FRAME: 0184

Property Type	Number
Application Number:	14000995
Application Number:	14001685
Application Number:	14005601
Application Number:	61885676
PCT Number:	US1364203
Application Number:	14050512

#### **CORRESPONDENCE DATA**

**Fax Number:** (212)336-8001

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.

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ATTORNEY DOCKET NUMBER:	96700/2153
NAME OF SUBMITTER:	ALAN D. MILLER
SIGNATURE:	/Alan D. Miller/
DATE SIGNED:	10/28/2015

### **Total Attachments: 55**

source=CorrectiveAssignment#page1.tif source=CorrectiveAssignment#page2.tif source=CorrectiveAssignment#page3.tif source=CorrectiveAssignment#page4.tif source=CorrectiveAssignment#page5.tif source=CorrectiveAssignment#page6.tif source=CorrectiveAssignment#page7.tif source=CorrectiveAssignment#page8.tif source=CorrectiveAssignment#page9.tif source=CorrectiveAssignment#page10.tif source=CorrectiveAssignment#page11.tif source=CorrectiveAssignment#page12.tif source=CorrectiveAssignment#page13.tif source=CorrectiveAssignment#page14.tif source=CorrectiveAssignment#page15.tif source=CorrectiveAssignment#page16.tif source=CorrectiveAssignment#page17.tif source=CorrectiveAssignment#page18.tif source=CorrectiveAssignment#page19.tif source=CorrectiveAssignment#page20.tif source=CorrectiveAssignment#page21.tif source=CorrectiveAssignment#page22.tif





### United States Patent and Trademark Office





# Electronic Patent Assignment System

# **Confirmation Receipt**

Your assignment has been received by the USPTO. The coversheet of the assignment is displayed below:

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

SUBMISSION TY	PE: NEW ASSIGNMENT		
NATURE OF CO	NVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA			
Name			Execution Date
ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY		09/09/2015	
RECEIVING PAR	TY DATA		
Name:	COM AFFILIATION, INC.		
Street Address:	1300 MORRIS PARK AVENUE		
City:	BRONX		
State/Country:	NEW YORK		
Postal Code:	10461		
PROPERTY NUMBERS Total: 25			
Property Type Number			
Patent Number:	atent Number: 8726046		
Patent Number:	atent Number: 8835467		
Application Number: 13813163			

Application Number:	13775312
PCT Number:	US1328160
Patent Number:	8859499
PCT Number:	US1330355
Application Number:	13803972
Patent Number:	8703496
Application Number:	13845324
Application Number:	13808495
Patent Number:	8716235
Application Number:	61813773
Application Number:	13884298
Application Number:	13885203
Application Number:	13991091
Application Number:	13912266
Application Number:	13979179
Application Number:	13985087
Application Number:	14000995
Application Number:	14001685
Application Number:	14005601
Application Number:	61885676
PCT Number:	US1364203
Application Number:	14050512

### CORRESPONDENCE DATA

Fax Number: Phone:

(212)336-8001 212 336 8000

ptodocket@arelaw.com

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.

Correspondent Name: AMSTER, ROTHSTEIN & EBENSTEIN LLP
Address Line 1: 90 PARK AVENUE

Address Line 1:

90 PARK AVENUE

Address Line 4:

NEW YORK, NEW YORK 10016

ATTORNEY DOCKET

NUMBER:

96700/2153

B :

NAME OF SUBMITTER:	ALAN D. MILLER
Signature:	/Alan D. Miller/
Date:	10/16/2015

Total Attachments: 47 source=Assignment#page1.tif source=Assignment#page2.tif source=Assignment#page3.tif source=Assignment#page4.tif source=Assignment#page5.tif source=Assignment#page6.tif source=Assignment#page7.tif source=Assignment#page8.tif source=Assignment#page9.tif source=Assignment#page10.tif source=Assignment#page11.tif source=Assignment#page12.tif source=Assignment#page13.tif source=Assignment#page14.tif source=Assignment#page15.tif source=Assignment#page16.tif source=Assignment#page17.tif source=Assignment#page18.tif source=Assignment#page19.tif source=Assignment#page20.tif source=Assignment#page21.tif source=Assignment#page22.tif source=Assignment#page23.tif source=Assignment#page24.tif source=Assignment#page25.tif source=Assignment#page26.tif source=Assignment#page27.tif source=Assignment#page28.tif source=Assignment#page29.tif source=Assignment#page30.tif source=Assignment#page31.tif source=Assignment#page32.tif source=Assignment#page33.tif source=Assignment#page34.tif source=Assignment#page35.tif source=Assignment#page36.tif source=Assignment#page37.tif source=Assignment#page38.tif source=Assignment#page39.tif source=Assignment#page40.tif source=Assignment#page41.tif source=Assignment#page42.tif source=Assignment#page43.tif source=Assignment#page44.tif source=Assignment#page45.tif source=Assignment#page46.tif source=Assignment#page47.tif

### RECEIPT INFORMATION

EPAS ID:

PAT3572496

Receipt Date:

10/16/2015

# Return to home page

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**PATENT** 10/16/2015

REEL: 036984 FRAME: 0190

### PATENT ASSIGNMENT

This Patent Assignment (this "Assignment") is made as of September 9, 2015, by ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY (also known as ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY, A DIVISION OF YESHIVA UNIVERSITY (hereinafter, "Yeshiva")), having a principal place of business at 1300 Morris Park Avenue, Bronx, New York 10461, U.S.A. (hereinafter "ASSIGNOR") to COM Affiliation, Inc., having a principal place of business at 1300 Morris Park Avenue, Bronx, New York 10461, U.S.A. (hereinafter "ASSIGNEE").

WHEREAS, ASSIGNEE and Yeshiva are parties to that certain Joint Collaboration Agreement, dated as of the date hereof (the "JCA");

WHEREAS, the JCA provides for the execution and delivery of this Assignment by ASSIGNOR to ASSIGNEE;

WHEREAS, ASSIGNOR, is the assignee of the entire right, title and interest to, or is an assignee of an undivided interest in the entirety of, the United States patents, United States patent applications and foreign patents and patent applications identified in Schedule A attached hereto (hereafter the "Patents");

WHEREAS, the United States Government retains certain rights in the Patents as set forth in 35 U.S.C. §200 *et. seq.* and applicable regulations, and has approved this Assignment pursuant to 37 CFR §401.14(k);

WHEREAS, ASSIGNOR desires to assign all of its rights, titles and interests in and to the Patents to COM Affiliation, Inc., having a principal place of business at 1300 Morris Park Avenue, Bronx, New York 10461, U.S.A. (hereinafter "ASSIGNEE"); and

WHEREAS, ASSIGNEE desires to purchase or acquire all of ASSIGNORS rights, titles and interests in and to the Patents;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto, intending to be legally bound, agree as follows:

1. ASSIGNOR hereby assigns and transfers unto ASSIGNEE, and ASSIGNEE hereby accepts, all of ASSIGNOR's rights, titles and interests in and to the Patents in all countries where such rights, titles and interests exist, including any continuations, divisionals, renewals,

continuations-in-part, reissues, reexaminations, post-issuance proceedings and extensions or substitutes thereof, together with all preliminary invention records with respect thereto and all claims that may be obtained therefrom and all income and royalties due or payable now or hereafter.

- 2. From and after the date hereof, ASSIGNOR shall, without further consideration, execute and deliver such instruments of transfer, conveyance, assignment and assumption, provide such material and information and take such other action as may reasonably be necessary, proper or advisable to consummate or give effect to the transactions contemplated hereunder and under the JCA and to fulfill its obligations under this Assignment.
- 3. Nothing in this Assignment, express or implied, is intended to or shall be construed to modify, expand, supersede or limit in any way the terms, conditions or obligations of the JCA. To the extent that any provision of this Assignment conflicts with or is inconsistent with the terms of the JCA, the JCA shall control and govern.
- 4. This Assignment shall be governed by, and construed in accordance with, the laws of the United States or the appropriate foreign jurisdiction in respect to patent issues, and in all other respects, including as to validity (except for issues of patent validity), interpretation and effect, by the laws of the State of New York, without giving effect to the conflict of laws rules thereof.
- 5. This Assignment may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement.

[Remainder of page intentionally left blank; signature page follows]

\\\\\Y - 029585/000018 - 4409969 v6 PATENT
REEL: 036984 FRAME: 0192

IN WITNESS WHEREOF, ASSIGNOR and ASSIGNEE have caused these presents to be executed by their respective duly authorized officers or agents as of the date first above written.

ASSIGNOR:

ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY

By: Name: Andrew J. Lauer

Title: Secretary

ASSIGNEE:

COM AFFILIATION, INC.

By: Name: Steven M. Safyer, M.D.

Title: President

[Signature Page to Patent Assignment]

IN WITNESS WHEREOF, ASSIGNOR and ASSIGNEE have caused these presents to be executed by their respective duly authorized officers or agents as of the date first above written.

ASSIGNOR:

ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY

Name: Andrew J. Lauer

Title: Secretary

ASSIGNEE:

COM AFFILIATION, INC.

By:

Name: Steven M. Safyer, M.D. Title: President

[Signature Page to Patent Assignment]

## Schedule A

## Patents and Patent Applications

Title	Application Number	Patent Issued Number
GENE FOR L-PHENYLANINE	08/461,990	US 5,851,810
DEHYDRIGENASE		
RECOMBINANT MYCOBACTERIA	08/463,942	US 5,854,055
PEPTIDES WHICH BIND TO ANTI-	08/531,832	US 6,001,964
DOUBLE STRANDED DNA		
ANTIBODY		
THYROID SODIUM/IODIDE	08/595,553	US 6,391,579
SYMPORTER AND NUCLEIC ACID		
ENCODING SAME		
REP-MAX PROTEIN HAVING ANTI-	08/609,046	US 5,811,298
ONCOGENIC ACTIVITY AND USES		
THEREOF		
POLYCYSTIC KIDNEY DISEASE	08/651,999	US 6,031,088
PKD2 GENE AND USES THEREOF		
METHOD OF COMPOUNDS FOR	08/700,306	US 5,837,480
INHIBITING LIPID BIOSYNTHESIS		
OF BACTERIA AND PLANTS		
MYCOBACTERIAL SPECIES-	08/705,557	US 6,300,061 <sup>2</sup>
SPECIFIC REPORTER		
MYCOBACTERIOPHAGES	***************************************	
HUMAN PROSTAGLANDIN	08/706,936	US 5,792,851
TRANSPORTER	**************************************	
HEMOGLOBIN CROSSLINKERS	08/720,250	US 5,750,725
PANCREATIC B-CELLS FOR	08/732,155	US 6,156,306
ALLOGENEIC TRANSPLANTATION		
WITHOUT IMMUNOSUPPRESSION		
Methods and Composition for	08/743,796	US 5,928,914 <sup>3</sup>
Transforming Cells		
RECOMBINANT MYCOBACTERIA	08/747,177	US 6,221,364
AUXOTROPHIC FOR		
DIAMINOPIMELATE		
METHOD FOR DETECTING	08/746,635	US 6,989,240
HEMOLYSIS		
ANTIMYCOBACTERIAL	08/766,273	US 5,837,732 <sup>4</sup>
COMPOUNDS AND METHOD OF		
USING SAME		

 $<sup>^1</sup>$  This patent is jointly owned with Whitehead Institute for Biomedical Research and the Board of Trustees of the Leland Stanford Junior University.

A-1

<sup>&</sup>lt;sup>2</sup> This patent is jointly owned with University of Pittsburgh Cathedral of Learning.

<sup>&</sup>lt;sup>3</sup> This patent is jointly owned with MIT.

<sup>&</sup>lt;sup>4</sup> This patent is jointly owned with the Research Foundation of the City University of New York.

Title	Application Number	Patent Issued Number
METHOD OF SIMULTANEOUSLY ENHANCING ANALGESIC	08/782,452	US RE,36,547
POTENCY AND ATTENUATING		
DEPENDENCE LIABILITY CAUSED		
BY ENDOGENOUS OPIOD		
AGONISTS		
GENE THERAPY FOR	08/799,144	US 6,150,338
ALLEVIATING ERECTILE	00/722,144	05 0,150,550
DYSFUNCTION		
VECTOR CONSTRUCTS FOR THE	08/816,721	US 5,981,182
SELECTION AND IDENTIFICATION	00/010,721	000,501,102
OF OPEN READING FRAMES		
AN EMBCAB OPERON OF	08/822,586	US 6,015,890
MYCOBACTERIA AND MUTANTS		
THEROF		
PEPTIDES FOR THE TREATMENT	08/833,838	US 6,932,970
AND DIAGNOSIS OF SYSTEMIC	,	
LUPUS ERYTHEMATOSUS		
TM4 CONDITIONAL SHUTTLE	08/938,059	US 5,972,700
PHASMIDS AND USES THEREOF		
INHIBITORS OF NUCLEOSIDE	08/949,388	US 5,985,848 <sup>5</sup>
METABOLISM		
A METHOD FOR DETECTING	08/971,384	US 5,997,846
ARTHROPODS		
MYCOBACTERIOPHAGES AND	09/014,560	US 5,968,733 <sup>6</sup>
USES THEREOF		
TRANSITION-STATE INHIBITORS	09/017,097	US 6,121,296
FOR NUCLEOSIDE HYDROLASE		
AND TRANSFERASE REACTIONS		~~~~~~~~ <del>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</del>
HEMOGLOBIN CROSSLINKERS	09/018,284	US 6,017,943
GENE THERAPY FOR	10-535822	JP 4158163
ALLEVIATING ERECTILE		
DYSFUNCTION		
L5 SHUTTLE PHASMIDS	09/075,904	US 5,994,137 <sup>7</sup>
HUMAN PROSTAGLANDIN	US 09/132,423	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
TRANSPORTER	05 07/152,125	
INHIBITORS OF NUCLEOSIDE	2305760.00	CA 2,305,760
METABOLISM		~ · · · · · · · · · · · · · · · · · · ·
INHIBITORS OF NUCLEOSIDE	6109456.20	HK 1089159
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	AT 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	BE 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	CY 1023308
METABOLISM		

<sup>&</sup>lt;sup>5</sup> This patent is jointly owned with Victoria Link Limited.

<sup>&</sup>lt;sup>6</sup> This patent is jointly owned with Whitehead Institute for Biomedical Research and the Board of Trustees of the Leland Stanford Junior University.

<sup>&</sup>lt;sup>7</sup> This patent is jointly owned with University of Pittsburgh Cathedral of Learning.

Title	Application Number	Patent Issued Number
INHIBITORS OF NUCLEOSIDE	98953516.60	DK 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	EP 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	FI 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	FR 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	DE 69831499
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	GR 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	IE 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	IT 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	LU 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	MC 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	NL 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	PT 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	ES 2249844
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	SE 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	CH 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	98953516.60	GB 1023308
METABOLISM		
INHIBITORS OF NUCLEOSIDE	09/172,321	US 6,066,722 <sup>8</sup>
METABOLISM		
INHIBITORS OF NUCLEOSIDE	10866/99	AU 749098
METABOLISM		
INHIBITORS OF NUCLEOSIDE	2000-515909	JP 4451983
METABOLISM		
INHIBITORS OF NUCLEOSIDE	1020007003944	KR 1006374790000
METABOLISM		
INHIBITORS OF NUCLEOSIDE	ZL200510092066.9	CN 100393722
METABOLISM		
INHIBITORS OF NUCLEOSIDE	ZL98811489.5	CN 1220695
METABOLISM		
VISUALIZATION OF RNA IN LIVING	09/177,268	US 6,203,986
CELLS	•	
THE INIB, INIA AND INIC GENES OF	09/177,349	US 6,268,201
MYCOBACTERIA AND METHODS		
OF USE		
Methods and Composition for	09/293,303	US 6,534,314°
Transforming Cells	· 	

 $<sup>^{\</sup>rm g}$  This patent is jointly owned with Victoria Link Limited.

Title	Application Number	Patent Issued Number
ONE STEP ALLELIC EXCHANGE IN	09/350,048	US 6,271,034
MYCOBACTERIA USING IN VITRO		
GENERATED CONDITIONAL		
TRANSDUCING PHAGES	00/250 227	710 ( 200 0 ( )
DIM MUTANTS OF	09/350,326	US 6,290,966
MYCOBACTERIA AND USES THEREOF		
POLYCYSTIC KIDNEY DISEASE	09/385,752	US 6,228,591
PKD2 GENE AND USES THEREOF	09/383,/32	03 0,220,391
MYCOBACTERIAL SPECIES-	09/426,436	US 6,225,066 <sup>10</sup>
SPECIFIC REPORTER	09/420,430	05 0,225,000
MYCOBACTERIOPHAGES		
INHIBITORS OF NUCLEOSIDE	09/496,741	US 6,228,847 <sup>11</sup>
METABOLISM	057 150,7 12	00 0,220,017
METHODS FOR DIAGNOSING AND	09/519,959	US 6,821,725 <sup>12</sup>
TREATING OF BREAST CANCER		
GENE THERAPY FOR REGULATING	09/531,968	US 6,239,117
BLADDER SMOOTH MUSCLE TONE	<i>'</i>	
GENE THERAPY FOR REGULATING	09/532,138	US 6,271,211
PENILE SMOOTH MUSCLE TONE		
METHOD OF ENHANCING	09/531,969	US 7,030,096
RELAXATION OF PENILE SMOOTH		
MUSCLE BY INTRODUCTION OF		
DNA ENCODING MAXI-K		
POTASSIUM CHANNEL PROTEIN		
3H,5H-PYRROLO[3,2-d] PYRIMIDIN-	2005108316.60	CN 100344630
4-ONE DERIVATIVES AND		
PROCESS OF PREPARING SAME	0.105.00.00	TIP 11 cccc1
PROCESS FOR PREPARING	917509.20	EP 1165564
INHIBITORS OF NUCLEOSIDE		
METABOLISM PROCESS FOR PREPARING	514660.00	NZ 514660
INHIBITORS OF NUCLEOSIDE	314000.00	NZ. 314000
METABOLISM		
PROCESS FOR PREPARING	808441.60	CN 1196704
INHIBITORS OF NUCLEOSIDE	300171.00	C14 1170704
METABOLISM		
PROCESS FOR PREPARING	2368095.00	CA 2368095
INHIBITORS OF NUCLEOSIDE		
METABOLISM		
PROCESS FOR PREPARING	1020017012816	KR 1007551100000
INHIBITORS OF NUCLEOSIDE		
METABOLISM		
PROCESS FOR PREPARING	2000-611706	JP 4430247
INHIBITORS OF NUCLEOSIDE		
METABOLISM		

<sup>&</sup>lt;sup>9</sup> This patent is jointly owned with MIT.

<sup>&</sup>lt;sup>10</sup> This patent is jointly owned with University of Pittsburgh.

<sup>&</sup>lt;sup>11</sup> This patent is jointly owned with Victoria Link Limited.

<sup>&</sup>lt;sup>12</sup> This patent is jointly owned with Rutgers, the State University of New Jersey.

Title	Application Number	Patent Issued Number
PROCESS FOR PREPARING	38469/00	AU 776540
INHIBITORS OF NUCLEOSIDE METABOLISM		
PROCESS OF PREPARING 3H, 5H-	CN 200610148465.70	
PYRROLO [3,2-d] PYRIMIDIN-4-ONE		
DERIVATIVES		
One Step Allelic Exchange in	PCT/US00/40311	US 6,271,034
Mycobacteria Using in vitro generated		
conditional Transducing Phages		
Drosophila recombination-associated	09/621,377	US 6,534,643
protein and methods for use		
Drosophila recombination-associated	63612/00	AU 780837
protein and methods for use		
POLYCYSTIC KIDNEY DISEASE	09/753,008	US 7,083,915
PKD2 GENE AND USES THEREOF	20/040 03/	
INHIBITORS OF NUCLEOSIDE	09/820,276	US 6,492,347 <sup>13</sup>
METABOLISM	20/00/00/00	7 10 W 0 0 4 W 0
NOVEL GLUCOSE	09/886,954	US 7,001,735
TRANSPORTER/SENSOR PROTEIN		
AND USES THEREOF	0.010.00.00	5.10. 6 mm 0.00.4
INSERTIONAL MUTATIONS IN	09/898,762	US 6,752,994
MYCOBACTERIA		
IniB, IniA and IniC Genes of	09/918,951	US 6,821,769 B2
Mycobacteria and Methods of use	00/00/15 8/4	**************************************
MEMORY TESTS USING ITEM-	09/924,375	US 6,689,058
SPECIFIC WEIGHTED MEMORY		
MEASUREMENTS AND USES THEREOF		
PROCESS FOR PREPARING	09/958,219	US 6,693,193
INHIBITORS OF NUCLEOSIDE	09/936,219	03 0,093,193
METABOLISM		
THYROID SODIUM/IODIDE	09/995,007	US 6,803,199
SYMPORTER AND NUCLEIC ACID	071775,001	000,000,122
ENCODING SAME		
Improved Inhibitors of ADP-Ribosyl	10/158,636	US 7,022,680 B2
Transferases Cyclases, and Hygdrolases		,,
SIZE ENHANCED HEMOGLOBINS:	10/198,732	US 7,019,117
SURFACE DECORATION AND		, ,
CROSSLINKING OF THE PROTEIN		
WITH POLYOXY ALKYLENE		
GLYCOLS		
Drosophila recombination-associated	10/031,893	US 6,830,910
protein and methods for use	·	
METHOD FOR DETECTING CHITIN-	10/200,984	US 6,875,421
CONTAINING ORGANISMS.		
METHOD FOR TREATING A	10/223,068	US 7,470,718
DEMYELINATING CONDITION		
INHIBITORS OF NUCLEOSIDE	10/268,652	US 6,803,455
METABOLISM		***************************************
SIR2 PRODUCTS AND ACTIVITIES	10/301,514	US 6,987,091 <sup>14</sup>

 $<sup>^{13}</sup>$  This patent is jointly owned with Victoria Link Limited.

Title	Application Number	Patent Issued Number
Gene Therapy for Alleviating Erectile	61468/98	AU 745637
Dysfunction		·
PROTEIN TYROSINE	10/340,288	US 8,071,348
PHOSPHATASE SUBSTRATE-		
TRAPPING DOUBLE MUTANT AND		
USES THEREOF		
MEMORY ASSESSMENT BY	10/350,155	US 7,314,444
RETRIEVAL SPEED AND USES		0.0 /,2 1 .,
THEREOF		
ATTENUATED MYCOBACTERIUM	10/351,452	US 7,722,861
TUBERCULOSIS VACCINES	10.001,10.0	00,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Drosophila recombination-associated	10/353,174	US 6,858,716
protein and methods for use	10/333,174	03 0,030,710
A METHOD OF INHIBITING CELL	10/424,630	US 6,897,197
PROLIFERATION USING AN ANTI-	10/424,030	0.3 0,097,197
ONCOGENE PROTEIN		
INHIBITION OF HIV-I VIRION	10/624,080	US 7,326,416
PRODUCTION BY A	10/024,000	U3 7,320,410
TRANSDOMINANT MUTANT OF		
INTEGRASE INTERACTOR 1 (INII)/		
HSNF5		
INHIBITORS OF NUCLEOSIDE	538368.00	NZ 538368
PHOSPHORYLASES AND	330300.00	NZ 336306
NUCLEOSIDASES		
INHIBITORS OF NUCLEOSIDE	2496698.00	CA 2496698
PHOSPHORYLASES AND	2490090.00	CA 2490098
NUCLEOSIDASES		
INHIBITORS OF NUCLEOSIDE	3824354.70	CN 100379750
PHOSPHORYLASES AND	3624334.70	CN 1003/9/30
NUCLEOSIDASES		
INHIBITORS OF NUCLEOSIDE	2003258911.00	AU 2003258911
PHOSPHORYLASES AND	2003236911.00	AU 2003238911
NUCLEOSIDASES		
INHIBITORS OF NUCLEOSIDE	2005107714.00	RU 2330042
PHOSPHORYLASES AND	2003107714.00	RO 2330042
NUCLEOSIDASES		
INHIBITORS OF NUCLEOSIDE	20027020040.00	EP 1539783
PHOSPHORYLASES AND	20037929049.00	E.F. 1339/63
NUCLEOSIDASES		
INHIBITORS OF NUCLEOSIDE	BR 0313664-7	
PHOSPHORYLASES AND	DK 0313004-/	
NUCLEOSIDASES  INHIBITORS OF NUCLEOSIDE	1020057002050	KR 10010812260000
INHIBITORS OF NUCLEOSIDE	1020057002959	KK 10010812200000
PHOSPHORYLASES AND   NUCLEOSIDASES		
	200601024.2	CO 110553
INHIBITORS OF NUCLEOSIDE	200501034-3	SG 110552
PHOSPHORYLASES AND		
NUCLEOSIDASES  RHUBITORS OF MUCLEOSIDE	600/DELND/2005	13.1 34.4037
INHIBITORS OF NUCLEOSIDE	680/DELNP/2005	IN 244827
PHOSPHORYLASES AND		
NUCLEOSIDASES		

 $<sup>^{\</sup>rm 14}$  This patent is jointly owned with Johns Hopkins University.

Title	Application Number	Patent Issued Number
METHODS OF APPLYING	10/704,469	US 7,651,689
IONIZATION RADIATION FOR	·	
THERAPY OF INFECTIONS		
PROCESS FOR PREPARING	10/737,724	US 7,022,852 <sup>15</sup>
INHIBITORS OF NUCLEOSIDE	Í	
METABOLISM		
MODIFIED HEMOGLOBIN AND	ID W00 2005 01622	
METHOD OF MAKING SAME		
MODIFIED HEMOGLOBIN AND	3799982.80	FR 1585538
METHODS OF MAKING SAME		
MODIFIED HEMOGLOBIN AND	3799982.80	DE 1585538
METHODS OF MAKING SAME	5,22202.00	1303333
MODIFIED HEMOGLOBIN AND	3799982.80	IT 1585538
METHODS OF MAKING SAME	3777702.00	11 1303330
MODIFIED HEMOGLOBIN AND	3799982.80	ES 2360215
METHODS OF MAKING SAME	3777762.60	LB 2500215
MODIFIED HEMOGLOBIN AND	3799982.80	GB 1585538
METHODS OF MAKING SAME	3799902,80	GD 1363336
	2003299700.00	AU 2003299700
MODIFIED HEMOGLOBIN AND	2003299700.00	AU 2003299700
METHODS OF MAKING SAME MODIFIED HEMOGLOBIN AND	200220100157.00	CN 1741812
	200380109157.80	CN 1/41812
METHODS OF MAKING SAME	1000007011707	WD 100100(1300000
MODIFIED HEMOGLOBIN AND	1020057011737	KR 10010861380000
METHODS OF MAKING SAME	7.1.1.10.00.510.00.000	3.677.077.67.67
MODIFIED HEMOGLOBIN AND	PA/A/2005/006702	MX 274545
METHODS OF MAKING SAME		
MODIFIED HEMOGLOBIN AND	3799982.80	EP 1585538
METHODS OF MAKING SAME		
MODIFIED HEMOGLOBIN AND	JP 2004-563778	
METHODS OF MAKING SAME		
MODIFIED HEMOGLOBIN	BR PI0317721-1	
MOLECULE AND METHODS OF		
MAKING SAME		
Pegylated Non-Hypertensive	10/741,496	US 7,084,112
Hemoglobins, Methods of Preparing		
Same, and uses thereof		22222
MODIFIED HEMOGLOBIN AND	P120034947	MY-135256-A
METHODS OF MAKING SAME		
MODIFIED HEMOGLOBIN AND	TW 92136572.00	
METHODS OF MAKING SAME		
PROCESS FOR PREPARING	1020057014266	KR 1011851200000
INHIBITORS OF NUCLEOSIDE		
PHOSPHORYLASES		
PROCESS FOR PREPARING	4706902.60	EP 1590360
INHIBITORS OF NUCLEOSIDE		
PHOSPHORYLASES		
PROCESS FOR PREPARING	3313/DELNP/2005	IN 231852
INHIBITORS OF NUCLEOSIDE		
PHOSPHORYLASES		

 $<sup>^{15}</sup>$  This patent is jointly owned with Victoria Link Limited.

Title	Application Number	Patent Issued Number
PROCESS FOR PREPARING INHIBITORS OF NUCLEOSIDE PHOSPHORYLASES	AU 2004208968.00	
PROCESS FOR PREPARING INHIBITORS OF NUCLEOSIDE PHOSPHORYLASES	200504607-3	SG 113994
Thyroid Sodium/Iodide Symporter and Nucleic Acid Encoding Same	97903839.5	EP 0888370
RADIOLABELED ANTIBODIES FOR TREATMENT OF TUMORS	10/775,869	US 7,402,385
MODIFIED HEMOGLOBIN AND METHODS OF MAKING SAME.	4250032.00	SA 1859
A NOVEL SAITOHIN GENE AND USES OF SAME	10/495,545	US 7,314,733
GENE TRANSFER FOR REGULATING SMOOTH MUSCLE TONE	HK 5109323.40	
OPEN HALF VOLUME QUADRATURE TRANSVERSE ELECTROMAGNETIC COIL FOR HIGH FIELD MAGNETIC RESONANCE IMAGING	10/845,953	US 6,980,003
INHIBITORS OF NUCLEOSIDE METABOLISM	10/932,841	US 7,211,653 <sup>16</sup>
THYROID SODIUM/JODIDE SYMPORTER AND NUCLEIC ACID ENCODING SAME	10/937,239	US 7,320,863
METHODS FOR DIAGNOSIS AND TREATMENT OF BREAST CANCER	10/961,615	US 7,303,740 <sup>17</sup>
UNIVERSAL RED BLOOD CELLS, METHODS OF PREPARING SAME, AND USES THEREOF	11/004,052	US 7,521,174
POLYCYSTIC KIDNEY DISEASE PKD2 GENE AND USES THEREOF	11/040,384	US 7,294,465
5H-PYRROLO[3,2-D] PYRIMIDINE INHIBITORS OF NUCLEOSIDE PHOSPHORYLASES AND NUCLEOSIDASES	10/524,995	US 7,553,839 <sup>18</sup>
METHODS FOR DIAGNOSING AND TREATING PEDIATRIC NEOPLASMS	11/101,164	US 7,816,089
ATTENUATED MYCOBACTERIUM TUBERCULOSIS VACCINES	11/109,056	US 7,758,874 <sup>19</sup>
CAGED LIGANDS AND USES THEREOF	10/532,009	US 8,076,318

 $<sup>^{16}</sup>$  This patent is jointly owned with Victoria Link Limited.  $^{17}$  This patent is jointly owned with Rutgers, the State University of New Jersey.

This patent is jointly owned with Victoria Link Limited.
 This patent is jointly owned with the President and Fellows of Harvard College.

Title	Application Number	Patent Issued Number
PEPTIDES FOR DETECTING ANTI-	11/129,260	US 7,517,657
DOUBLE STRANDED DNA		
ANTIBODY AND USES THEREOF		
USE OF MYCOBACTERIAL	10/542,958	US 8,084,041
VACCINES IN CD4+ OR CD8+		
LYMPHOCYTE-DEFICIENT		
MAMMALS		
ISOLATION, GENE EXPRESSION	CA 2576702.00	
AND CHEMOTHERAPEUTIC		
RESISTANCE OF MOTILE CANCER		
CELLS		
METHOD FOR IDENTIFYING	5807467.50	EP 1784646
METASTASIS IN MOTILE CELLS		
METHOD FOR IDENTIFYING	5807467.50	FR 1784646
METASTASIS IN MOTILE CELLS		
METHOD FOR IDENTIFYING	5807467.50	DE 1784646
METASTASIS IN MOTILE CELLS		
METHOD FOR IDENTIFYING	5807467.50	IE 1784646
METASTASIS IN MOTILE CELLS	3007.137.30	12 170 10 10
METHOD FOR IDENTIFYING	5807467.50	CH 1784646
METASTASIS IN MOTILE CELLS	3007 107.30	011 170 1010
METHOD FOR IDENTIFYING	5807467.50	GB 1784646
METASTASIS IN MOTILE CELLS	3007107.30	0.5 170.0.0
CERAMIDE DERIVATIVES AS	200580028988.10	CN 101010086
MODULATORS OF IMMUNITY AND	200380020708.10	CIV 101010000
AUTOIMMUNITY		
CERAMIDE DERIVATIVES AS	11/211,653	US 7,772,380
MODULATORS OF IMMUNITY AND	11/211,005	05 7,772,500
AUTOIMMUNITY		
CERAMIDE DERIVATIVES AS	JP 2012-152661	
MODULATORS OF IMMUNITY AND	31 2012-132001	
AUTOIMMUNITY		
CERAMIDE DERIVATIVES AS	NZ 553320.00	
MODULATORS OF IMMUNITY AND	NZ 333320.00	
AUTOIMMUNITY		
CERAMIDE DERIVATIVES AS	2007-530141	JP 5226311
MODULATORS OF IMMUNITY AND	2007-330141	31 3220311
AUTOIMMUNITY		
CERAMIDE DERIVATIVES AS	1020077003168	KR 1013771160000
MODULATORS OF IMMUNITY AND	102007/003106	WW00111/11101 AS
AUTOIMMUNITY		
CERAMIDE DERIVATIVES AS	PCT/US05/30330	
MODULATORS OF IMMUNITY AND	1 01/0503/30330	
AUTOIMMUNITY		
BIOLOGICAL MARKERS FOR	11/229,327	US 7,491,543
LONGEVITY AND DISEASES AND	11/449,347	US 1,471,343
USES THEREOF		
SIR2 PRODUCTS AND ACTIVITIES	11/248,523	US 7,432,246 <sup>20</sup>
SINZ FRODUCTS AND ACTIVITIES	11/240,323	US 7,432,240

 $<sup>^{\</sup>rm 20}$  This patent is jointly owned with The John Hopkins University.

Title	Application Number	Patent Issued Number
ANTIGENS TARGETED BY	10/557,273	US 8,758,767 <sup>21</sup>
PREVALENT PATHOGENIC T		
CELLS IN TYPE 1 DIABETES AND		
USES THEREOF		
MODIFIED HEMOGLOBIN AND	10/538,976	US 7,501,499
METHODS OF MAKING SAME	,	
Inhibitors of ADP-Ribosyl Transferases	11/294,932	US 7,504,489 B2
Cyclases, and Hygdrolases and uses	,	, , , , , , , , , , , , , , , , , , ,
thereof		
PROCESS FOR PREPARING	11/297,954	US 7,211,677 <sup>22</sup>
INHIBITORS OF NUCLEOSIDE		
METABOLISM		
SIR2 REGULATION	10/560,676	US 8,383,653
MYCOBACTERIAL MUTANTS	2597698,00	CA 2,597,698
AFFECTING HOST APOPTOSIS	257/076,00	CA 2,377,038
MYCOBACTERIAL MUTANTS	2006204907.00	AU 2006204907
AFFECTING HOST APOPTOSIS	2000204907.00	AO 2000204907
	EP 6733693.30	
MYCOBACTERIAL MUTANTS AFFECTING HOST APOPTOSIS	EF 0/33093.30	
	2(0(022.00	C4 2 (0( 022
METHODS OF APPLYING	2606022.00	CA 2,606,022
IONIZATION RADIATION FOR		
THERAPY OF HIV INFECTION	2007/0070	77
METHODS OF APPLYING	2007/08539	ZA 2007/08539
IONIZATION RADIATION FOR		
THERAPY OF HIV INFECTION		
METHOD FOR IDENTIFYING	10/574,307	US 7,745,163
ACETYLTRANSFERASE		
SUBSTRATES		
VITAMIN K FOR PREVENTION AND	EP 11189225.30	
TREATMENT OF SKIN RASH		
SECONDARY TO ANTI-EGFR		
THERAPY		
VITAMIN K FOR PREVENTION AND	AU 2006236633.00	AU2006236633
TREATMENT OF SKIN RASH		
SECONDARY TO ANTI-EGFR		
THERAPY		
Method of Identifying Responders to	US 10/578,811 <sup>23</sup>	
Treatment with Insulin Sensitizers		
TRANSITION STATE STRUCTURE	CA 2615549.00	
OF 5'-METHYLTHIOADENOSINE/		
SADENOSYLHOMOCYSTEINE		
NUCLEOSIDASES		
TRANSITION STATE STRUCTURE	EP 6788712.50	
OF 5'-METHYLTHIOADENOSINE/		
SADENOSYLHOMOCYSTEINE		
NUCLEOSIDASES		
Interleukin-10 Compositions for the	11/598,002	US 7,939,056 <sup>24</sup>
Treatment of Adenocarcinomas	·	,

 $<sup>^{21}</sup>$  This patent is jointly owned with University Technologies International Inc. and University of Virginia Patent Foundation.

<sup>&</sup>lt;sup>22</sup> This patent is jointly owned with Victoria Link Limited.

<sup>&</sup>lt;sup>23</sup> This patent application is jointly owned with Merck Sharp & Dohme Corp.

Title	Application Number	Patent Issued Number
MYCOBACTERIAL SecA2 MUTANTS	7717990.10	EP 1981964 <sup>25</sup>
MYCOBACTERIAL SecA2 MUTANTS	7717990.10	FR 1981964 <sup>26</sup>
MYCOBACTERIAL SecA2 MUTANTS	7717990.10	DE 1981964 <sup>27</sup>
MYCOBACTERIAL SecA2 MUTANTS	7717990.10	GB 1981964 <sup>28</sup>
MYCOBACTERIAL SECA2	200780007413.00	CN 101395265 <sup>29</sup>
MUTANTS		
MYCOBACTERIAL SecA2 MUTANTS	2008/06387	ZA 2008/06387 <sup>30</sup>
MYCOBACTERIAL SecA2 MUTANTS	IN	
	6437/DELNP/2008 <sup>31</sup>	
MYCOBACTERIAL SecA2 MUTANTS	BR P10706532-9 <sup>32</sup>	
ANTIGENS TARGETED BY	11/658,457	US 8,318,670 <sup>33</sup>
PATHOGENIC AI4 T CELLS IN TYPE		
1 DIABETES AND USES THEREOF		
ISOLATION, GENE EXPRESSION,	11/659,514	US 8,298,756
AND CHEMOTHERAPEUTIC		
RESISTANCE OF MOTILE CANCER		
CELLS		370000000000000000000000000000000000000
PROCESS FOR PREPARING	11/716,100	US 7,405,297 <sup>34</sup>
INHIBITORS OF NUCLEOSIDE		
METABLISM INHIBITORS OF NUCLEOSIDE	11/728,730	US 7.390.890 <sup>35</sup>
METABOLISM	11/728,730	05 7,390,890
MELANIN NANOSHELLS FOR	11/732,130	US 8,586,090
PROTECTION AGAINST	11//32,130	03 6,360,070
RADIATION AND ELECTRONIC		
PULSES		
CERAMIDE DERIVATIVES AS	11/785,988	US 8,022,043
MODULATORS OF IMMUNITY AND	,	, ,
AUTOIMMUNITY		
PROSTAGLANDIN TRANSPORTER	EP 7794912.10	
INHIBITORS		
METHODS AND COMPOSTIONS	10/582,662	US 7,919,578 <sup>36</sup>
FOR INHIBITION OF BCL6		
REPRESSION		*************************************
MYCOBACTERIAL MUTANTS	11/794,506	US 8,394,388
AFFECTING HOST APOPTOSIS		3.9
MYCOBACTERIA EXPRESSING	11/794,373	US 7,998,471 <sup>37</sup>
HIV-1 AND MALARIA ANTIGENS		

<sup>&</sup>lt;sup>24</sup> This patent is jointly owned with MIT and The Brigham and Women's Hospital.

<sup>&</sup>lt;sup>25</sup> This patent is jointly owned with the University of North Carolina at Chapel Hill.

<sup>&</sup>lt;sup>26</sup> This patent is jointly owned with the University of North Carolina at Chapel Hill.

<sup>&</sup>lt;sup>27</sup> This patent is jointly owned with the University of North Carolina at Chapel Hill.

<sup>&</sup>lt;sup>28</sup> This patent is jointly owned with the University of North Carolina at Chapel Hill.

<sup>&</sup>lt;sup>29</sup> This patent is jointly owned with the University of North Carolina at Chapel Hill.

<sup>&</sup>lt;sup>30</sup> This patent is jointly owned with the University of North Carolina at Chapel Hill.

<sup>&</sup>lt;sup>31</sup> This patent application is jointly owned with the University of North Carolina at Chapel Hill.

<sup>&</sup>lt;sup>32</sup> This patent application is jointly owned with the University of North Carolina at Chapel Hill.

<sup>&</sup>lt;sup>33</sup> This patent is jointly owned with the Jackson Laboratory.

<sup>&</sup>lt;sup>34</sup> This patent is jointly owned with Victoria Link Limited.

<sup>&</sup>lt;sup>35</sup> This patent is jointly owned with Victoria Link Limited.

<sup>&</sup>lt;sup>36</sup> This patent is jointly owned with the ICAHN School of Medicine at Mount Sinai.

Title	Application Number	Patent Issued Number
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	PCT/NZ2007/000261	E011359
ACYCLIC AMINE INHIBITORS OF NUCLEOSIDE PHOSPHORYLASES AND HYDROLASES	200780040294.90	CN 101528749
ACYCLIC AMINE INHIBITORS OF NUCLEOSIDE PHOSPHORYLASES AND HYDROLASES	EP 20110158228	
INHIBITION OF MEMBRANE FUSION PROTEINS	11/918,835	US 8,003,332
PEGYLATED ALBUMIN AND USES THEREOF	11/921,064	US 8,741,832
USES OF PEGYLATED ALBUMIN	11/921,689	US 8,071,546 <sup>38</sup>
Methods for Evaluating Patients	11/953,360	US 8,048,635 <sup>39</sup>
EFFECT OF BRI PROTEINS ON A- BETA PRODUCTION	US 11/921,976	
AZETIDINE ANALOGUES OF NUCLEOSIDASE AND PHOSPHORYLASE INHIBITORS	CN 200780047863.20	
TRANSITION STATE STRUCTURE OF 5'-METHYLTHIOADENOSINE/ S- ADENOSYLHOMOCYSTEINE NUCLEOSIDASES	11/988,651	US 8,541,567
METASTASIS SPECIFIC SPLICE VARIANTS OF MENA AND USES THEREOF IN DIAGNOSIS, PROGNOSIS AND TREATMENT OF TUMORS	CA 2676179.00 <sup>40</sup>	
METASTASIS SPECIFIC SPLICE VARIANTS OF MENA AND USES THEREOF IN DIAGNOSIS, PROGNOSIS AND TREATMENT OF TUMORS	EP 8713370.80 <sup>41</sup>	
ASSAYS FOR S100 INHIBITORS	11/989,901	US 8,236,791
NON ITERATIVE SHIMMING IN MAGNETIC RESONANCE IMAGING IN THE PRESENCE OF HIGH LIPID LEVELS	12/080,510	US 7,609,060
AN INTRACELLULAR DOMAIN OF A MAMMALIAN FAT1 (FAT1IC)	12/150,176	US 8,586,534
MYCOBACTERIAL SecA2 MUTANTS	12/087,628	US 8,101,191 <sup>42</sup>
RESTORATION OF NUCLEIC ACID FROM DEGRADED OR FORMALIN- FIXED AND PARAFFIN-EMBEDDED TISSUE AND USES THEREOF	12/087,951	US 8,497,067

<sup>&</sup>lt;sup>37</sup> This patent is jointly owned with Beth Israel Deaconess Medical Center, Inc. and Duke University.

<sup>&</sup>lt;sup>38</sup> This patent is jointly owned with La Jolla Bioengineering Institute.

<sup>&</sup>lt;sup>39</sup> This patent is jointly owned with Biogen Idec MA Inc.

<sup>&</sup>lt;sup>40</sup> This patent application is jointly owned with Ifo-Regina Elena Cancer Institute and MIT.

<sup>41</sup> This patent application is jointly owned with Ifo-Regina Elena Cancer Institute and MIT.

<sup>&</sup>lt;sup>42</sup> This patent is jointly owned with the University of North Carolina at Chapel Hill.

Title	Application Number	Patent Issued Number
ANALOGUES OF COFORMYCIN AND THEIR USE FOR TREATING PROTOZOAN PARASITE INFECTIONS	12/223,746	US 8,394,950 <sup>43</sup>
METHODS OF TREATING CANCER USING INHIBITORS OF 5'- METHYLTHIOADENOSINE PHOSPHORYLASE	12/224,073	US 8,916,571
RADIOSYNTHESIS AS AN ALTERNATIVE ENERGY UTILIZATION PROCESS IN MELANIZED ORGANISMS AND USES THEREOF	12/225,990	US 8,652,827
INHIBITION OF SKP2-CYCLIN A INTERACTION	12/226,935	US 8,173,604
PROSTAGLANDIN TRANSPORTER INHIBITORS	12/227,267	US 8,227,466
COMPOSITIONS FOR SUSTAINED RELEASE OF NITRIC OXIDE, METHODS OF PREPARING SAME AND USES THEREOF	12/227,657	US 8,333,997
BIOLOGICAL MARKERS FOR LONGEVITY AND DISEASES AND USES THEREOF	12/315,845	US 8,399,258
COMPOUNDS AND METHODS FOR DETECTING RICIN AND USES THEREOF	12/308,447	US 8,536,319
VITAMIN K FOR PREVENTION AND TREATMENT OF SKIN RASH SECONDARY TO ANTI-EGFR THERAPY (BEING PROSECUTED BY TALON)	11/886,803	US 7,745,494
DETECTION OF THE NUCLEOLAR CHANNEL SYSTEM OF HUMAN ENDOMETRIUM AND USES THEREOF	12/321,603	US 7,846,680
ACYCLIC AMINE INHIBITORS OF 5'-METHYTIOADENOSINE PHOSPHORYLASE AND NUCLEOSIDASE	12/310,597	US 8,383,636 <sup>44</sup>
ACYCLIC AMINE INHIBITORS OF NUCLEOSIDE PHOSPHORYLASES AND HYDROLASES	12/310,708	US 8,853,224 <sup>45</sup>
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	PCT/NZ2007/000261	EP 2057165
MULTI-MICRORNA METHODS AND COMPOSITIONS	12/312,616	US 8,114,982
SMALL MOLECULE INHIBITORS OF BCL6	12/312,800	US 8,338,464 <sup>46</sup>

<sup>&</sup>lt;sup>43</sup> This patent is jointly owned with Victoria Link Limited.

This patent is jointly owned with Victoria Link Limited.
 This patent is jointly owned with Victoria Link Limited.

Title	Application Number	Patent Issued Number
FUSED PYRIMIDINES AS INHIBITORS OF NUCLEOSIDE PHOSPHORYLASES AND	12/455,537	US 8,173,662 <sup>47</sup>
NUCLEOSIDASES AZETIDINE ANALOGUES NUCLEOSIDASE AND	12/448,397	US 8,283,345 <sup>48</sup>
PHOSPHORYLASE INHIBITORS  REGULATION OF LIPID DROPLET  FORMATION BY MODULATION OF  FIT1 AND FIT2 AND USES THEREOF	12/448,840	US 8,129,121 <sup>49</sup>
METASTASIS SPECIFIC SPLICE VARIANTS OF MENA AND USES THEREOF IN DIAGNOSIS, PROGNOSIS AND TREATMENT OF TUMORS	12/462,324	US 8,603,738 <sup>50</sup>
SECOND GENERATION LOW OXYGEN AFFINITY PEGYLATED HEMOGLOBINS AS OXYGEN- CARRYING PLASMA EXPANDERS	12/449,832	US 8,697,645
MYCOBACTERIAL MUTANTS INDUCING IL-12	12/450,193	US 8,591,918
METHODS AND COMPOSITIONS FOR TREATING BACTERIAL INFECTIONS BY INHIBITING QUORUM SENSING	EP 9814909.90	
TREATMENT OF AUTISM SPECTRUM DISORDERS WITH AGENTS THAT ACTIVATE THE LOCUS COERULEUS- NORADRENERGIC SYSTEM	12/589,854	US 8,470,546
METHODS FOR DETERMINING CYTOSINE METHYLATION IN DNA AND USES THEREOF	12/451,431	US 8,642,294 <sup>51</sup>
TREATMENT OF TYPE 2 DIABETES, METABOLIC SYNDROME, MYOCARDIAL INJURY AND NEURODEGENERATION WITH HUMANIN AND ANALOGS THEREOF	12/451,524	US 8,309,525 <sup>52</sup>
Bacterial Vaccines with Cell Wall- Associated Ceramide-Like Glycolipids and Uses Thereof	US 12/684,685	

<sup>&</sup>lt;sup>46</sup> This patent is jointly owned with the University of Maryland and University Health Network.

<sup>&</sup>lt;sup>47</sup> This patent is jointly owned with Victoria Link Limited.

<sup>&</sup>lt;sup>48</sup> This patent is jointly owned with Victoria Link Limited.

<sup>&</sup>lt;sup>49</sup> This patent is jointly owned with the Trustees of Columbia University in the City of New York.

<sup>&</sup>lt;sup>50</sup> This patent is jointly owned with Ifo-Regina Elena Cancer Institute and MIT.

<sup>&</sup>lt;sup>51</sup> This patent is jointly owned with the Research Foundation of State University of New York.

<sup>&</sup>lt;sup>52</sup> This patent is jointly owned with The Regents of the University of California.

Title	Application Number	Patent Issued Number
USE OF GAMMA SECRETASE	12/733,339	US 8,377,886
INHIBITORS AND NOTCH		
PATHWAY INHIBITORS FOR		
TREATMENT AND PREVENTION OF		
RENAL DISEASE		
Vitamin K for Prevention and Treatment	12/788,015	US 8,283,382
of Skin Rash Secondary to Anti-EGFR		
Therapy		
KETOCONAZOLE-DERIVATIVE	12/735,368	US 8,669,260
ANTAGONIST OF HUMAN		
PREGNANE X RECEPTOR AND		
USES THEREOF		***************************************
3-HYDROXYPYRROLIDINE	EP 10800093.60	
INHIBITORS OF 5'-		
METHYLTHIOADENOSINE		
PHOSPHORYLASE AND		
NUCLEOSIDASE	***************************************	***************************************
FENRETINIDE DERIVATIVES AND	12/735,544	US 8,460,635
USES THEREOF AS THERAPEUTIC,		
DIAGNOSTIC AND IMAGING		
AGENTS		
TUMOR MICROENVIRONMENT OF	12/804,779	US 8,642,277 <sup>53</sup>
METASTASIS (TMEM) AND USES		
THEREOF IN DIAGNOSIS,		
PROGNOSIS AND TREATMENT OF		
TUMORS		
PROSTAGLANDIN TRANSPORTER	AU 2010298720.00	
INHIBITORS AND USES THEREOF		
PROSTAGLANDIN TRANSPORTER	EP 10819142.00	
INHIBITORS AND USES THEREOF		
PROSTAGLANDIN TRANSPORTER	CA 2811154.00	
INHIBITORS AND USES THEREOF		
ANTI-PEPTIDE ANTIBODIES THAT	12/924,813	US 8,187,611
CROSS REACT WITH PROTECTIVE	,	, ,
ANTIGEN OF BACILLUS		
ANTHRACIS AND USES THEREOF		
METHODS FOR DETERMINING	12/925,633	US 8,455,214 <sup>54</sup>
CHEMOTHERAPEUTIC AGENTS	,	
TARGETING ALPHA-GLUCAN		
PATHWAYS AND USES THEREOF		
METHODS AND COMPOSITIONS	12/737,122	US 8,791,075
FOR INHIBITION OF BCL6	,	, ,
REPRESSION		
SAPORIN-L1 INHIBITORS AND	12/932,051	US 8,884,000 <sup>35</sup>
USES THEREOF	,	· '
METHODS AND COMPOSITIONS	12/932,304	US 8,703,503 <sup>56</sup>
FOR INHIBITION OF BCL6		, ,
REPRESSION		

 $<sup>^{53}</sup>$  This patent is jointly owned with MIT and Cornell University.

<sup>&</sup>lt;sup>54</sup> This patent is jointly owned with Plant Bioscience Ltd.

This patent is jointly owned with Victoria Link Limited.
 This patent is jointly owned with the ICAHN School of Medicine at Mount Sinai.

Title	Application Number	Patent Issued Number
METHOD FOR SUPPRESSING CANCER, INCREASING WEIGHT LOSS AND/OR INCREASING	EP 11759819.30	
INSULIN SENSITIVITY		
SOLID STATE SYNTHESIS	US 13/063,833	
HYDROXYL RADICALS FOR HIGH		
THROUGHPUT STRUCTURE DETERMINATION OF PROTEINS		
AND NUCLEIC ACIDS BY		
OXIDATIVE FOOTPRINTING	1	
Prevention of Chemotherapy-Induced	PCT/US11/051640	
Damage in the Hematopoietic Microenviornment by Neuroprotection		
Methods for Evaluating Patients	US 13/239,769 <sup>57</sup>	
MITOCHONDRIAL INHIBITORS TO	13/263,083	US 8,581,005
TREAT HUMAN DISEASE		
METHODS FOR DETERMINING	13/298,370	US 8,632,979 <sup>58</sup>
AGENTS THAT TREAT OR PREVENT OBESITY AND/OR		
OBESITY RELATED DISEASES AND		
METHODS FOR TREATMENT		
THEREWITH		
3-HYDROXYPYRROLIDINE	US 13/383,772 <sup>59</sup>	
INHIBITORS OF 5'- METHYLTHIOADENOSINE		
PHOSPHORYLASE AND		
NUCLEOSIDASE		
Functional Evaluation Of Site-Specific	13/349,745	US 8,993,242
DNA Methylation	DCTC/11010/0000	
RADIOBACTERIA FOR THERAPY OF CANCER	PCT/US12/23785	
PROSTAGLANDIN TRANSPORTER	13/394,857	US 8,952,150
INHIBITORS AND USES THEREOF		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
MYOSIN-IIA S1943	13/419,805	US 8,541,181
PHOSPHORYLATION AS A		
MARKER OF TUMOR INVASION ORAL ADMINISTRAION OF	JP 2014-501148	
MELANIN FOR PROTECTION	JF 2014-301146	
AGAINST RADIATION		
ORAL ADMINSTRATION OF	CA 2867832.00	
MELANIN FOR PROTECTION		
AGAINST RADIATION Inhibition of Macrophage Synthesized	PCT/US2012/031488	
WNT7B to Inhibit Tumor Angionesis	60	
and Metastasis		
MICRORNA AFFINITY ASSAY AND	13/500,083	US 8,846,350
USES THEREOF		

<sup>&</sup>lt;sup>57</sup> This patent application is jointly owned with Biogen Idec MA Inc.

<sup>&</sup>lt;sup>58</sup> This patent is jointly owned with University of Lausanne.

<sup>&</sup>lt;sup>59</sup> This patent application is jointly owned with Victoria Link Limited.

<sup>&</sup>lt;sup>60</sup> This patent application is jointly owned with Cincinnati Children's Hospital.

Title	Application Number	Patent Issued Number
CELL EXTRACT PROMOTED	13/526,930	US 8,609,374
CLONING		
Composicao Farmaceutica Para Controle	BR 018120023529 <sup>61</sup>	
De Vaso-Oclusao E Seus Usos		
FIDGETIN-LIKE 2 AS A TARGET TO	13/553,155	US 8,853,181
ENHANCE WOUND HEALING		
PROSTAGLANDIN TRANSPORTER	US 13/555,408 <sup>62</sup>	
INHIBITORS		
Process for Preparing Inhibitors of	5070237	JP 5070237
Nucleoside Metabolism		
METHODS OF SUPPRESSING	US 13/583,122	
CANCER, INCREASING WEIGHT		
LOSS AND/OR INCREASING		
INSULIN SENSITIVITY		
Diagnosis of Fungal Infections with a	US 13/511,264 <sup>63</sup>	
Urine Lateral Flow Device		
METHODS OF PREPARING	US 13/643,408	
TARGETED APTAMER PRODRUGS		
MIR27B IS A NOVEL TARGET FOR	13/707,055	US 8,729,046
TREATMENT OF LIVER FIBROSIS		
SIR2 REGULATION	13/747,543	US 8,835,467
LIGANDS AND METHODS FOR	US 13/813,163	
LABELING BIOMOLECULES IN		
VIVO		
METHOD FOR QUANTITATIVE	US 13/775,312	
ASSESSMENT OF VOLUMETRIC		
IMAGE FROM A SUBJECT AND		
USES THEREOF		
NOVEL CELLULAR TARGETS FOR	PCT/US13/28160	
HIV INFECTION		
METHOD OF ENHANCING	EP 13764824.20 <sup>64</sup>	
EFFICACY OF BLOOD		
TRANSFUSIONS		
METHOD OF ENHANCING	13/794,978	US 8,859,499 <sup>65</sup>
EFFICACY OF BLOOD		
TRANSFUSIONS	F74 0014 (075) (66	
METHOD OF ENHANCING	ZA 2014/07616 <sup>66</sup>	
EFFICACY OF BLOOD		
TRANSFUSIONS	173 401 F 401 401 197	
METHOD OF ENHANCING	JP 2015-501731 <sup>67</sup>	
EFFICACY OF BLOOD		
TRANSFUSIONS		

 $<sup>^{61}</sup>$  This patent application is jointly owned with Universidade Estadual de Campinas.

<sup>&</sup>lt;sup>62</sup> This patent is jointly owned with New York University.

<sup>&</sup>lt;sup>63</sup> This patent is jointly owned with Johns Hopkins University.

<sup>&</sup>lt;sup>64</sup> This patent application is jointly owned with The Regents of the University of California.

<sup>&</sup>lt;sup>65</sup> This patent is jointly owned with The Regents of the University of California.

<sup>&</sup>lt;sup>66</sup> This patent application is jointly owned with The Regents of the University of California.

<sup>&</sup>lt;sup>67</sup> This patent application is jointly owned with The Regents of the University of California.

Title	Application Number	Patent Issued Number
METHOD OF ENHANCING	IN 2089/	
EFFICACY OF BLOOD	MUMNP/2014 <sup>68</sup>	
TRANSFUSIONS		
METHOD OF ENHANCING	CL 2464-2014 <sup>69</sup>	
EFFICACY OF BLOOD		
TRANSFUSIONS		
METHOD OF ENHANCING	BR112014023200-8 <sup>70</sup>	
EFFICACY OF BLOOD		
TRANSFUSIONS		
METHOD OF ENHANCING	MX/A/2014/011186 <sup>71</sup>	
EFFICACY OF BLOOD		
TRANSFUSIONS		
METHOD OF ENHANCING	PCT/US13/30355 <sup>72</sup>	
EFFICACY OF BLOOD		
TRANSFUSIONS		
Modified Glycolipids and Methods of	US 13/803,972 <sup>73</sup>	
Making and Using the Same		
BIOLOGICAL MARKERS FOR	13/832,832	US 8,703,496
LONGEVITY AND DISEASES AND		
USE THEREOF		
GENE TRANSFER FOR	US 13/845,324	
REGULATING SMOOTH MUSCLE		
TONE		
Ceramide-Like Glycolipid-Associated	US 13/808,495 <sup>74</sup>	
Bacterial Vaccines and Uses Thereof		
METHOD FOR INHIBITING	13/860,109	US 8,716,235
METASTASIS BY USING ANTI-CCL3		
ANTIBODIES		
Trypanocidal Nanoparticles and Uses	US 61/813,773	
Thereof		
METHODS, ASSAYS AND	US 13/884,298 <sup>75</sup>	
COMPOUNDS FOR TREATING		
BACTERIAL INFECTIONS BY		
INHIBITING METHYLTHIOINOSINE		
PHOSPHORYLASE		
CONSTRUCTS AND METHODS TO	US 13/885,203	
IDENTIFY ANTIBODIES THAT		
TARGET GLYCANS		
MATERIALS AND METHODS FOR	US 13/991,091	
THE PREVENTION AND		
TREATMENT OF CANCER		
HUMAN BETAV-TUBULIN	US 13/912,266	
ANTIBODY AND METHODS OF USE		

<sup>&</sup>lt;sup>68</sup> This patent application is jointly owned with The Regents of the University of California.

<sup>&</sup>lt;sup>69</sup> This patent application is jointly owned with The Regents of the University of California.

<sup>&</sup>lt;sup>70</sup> This patent application is jointly owned with The Regents of the University of California.

<sup>71</sup> This patent application is jointly owned with The Regents of the University of California.

 $<sup>^{72}</sup>$  This patent application is jointly owned with The Regents of the University of California.

<sup>&</sup>lt;sup>73</sup> This patent application is jointly owned with Vaccinex, Inc.

<sup>&</sup>lt;sup>74</sup> This patent application is jointly owned with Vaccinex, Inc.

<sup>&</sup>lt;sup>75</sup> This patent application is jointly owned with Victoria Link Limited.

Title	Application Number	Patent Issued Number
METHODS AND ASSAYS FOR	US 13/979,179 <sup>76</sup>	
TREATING FILOVIRIDAE		
INFECTIONS		
RADIOBACTERIA FOR THERAPY	US 13/985,087	
OF CANCER		
Alternatively Spliced mRNA Isoforms as	US 14/000,995 <sup>77</sup>	
Prognostic Indicators for Metastatic		
Cancer		
TARGET DIRECTED TO	US 14/001,685	
ADIPOCYTES, METHODS AND		
ASSAYS FOR TREATMENT OF		
OBESITY		
ORAL ADMINSTRATION OF	US 14/005,601	
MELANIN FOR PROTECTION		
AGAINST RADIATION		
Two Novel Regulators of Human Cell	US 61/885,676	
Migration as Therapeutic Targets of		
Metastatic Disease and Fibrosis		
SEROLOGIC TEST FOR THE RAPID	PCT/US13/64203	
DIAGNOSIS OF ACTIVE		
TUBERCULOSIS		
ANTIBODIES TO HUMAN B7X FOR	US 14/050,512 <sup>78</sup>	
TREATMENT OF METASTATIC		
CANCER		
MELANIN NANOSHELLS FOR	US 14/059,960	
PROTECTION AGAINST		
RADIATION AND ELECTRONIC		
PULSES		
HUMAN INVASION SIGNATURE	US 14/115,928	
FOR PROGNOSIS OF METASTATIC		
RISK		
METASTASIS SPECIFIC SPLICE	US 14/074,089 <sup>79</sup>	
VARIANTS OF MENA AND USES		
THEREOF IN DIAGNOSIS,		
PROGNOSIS AND TREATMENT OF		
TUMORS		
IDENTIFICATION AND USE OF NEW	PCT/US13/70227 <sup>80</sup>	
TUMOR-PROMOTING GENE IN		
HEMATOLOGICAL MALIGNANCIES		
REGENERATION OF CORONARY	PCT/US13/70911	
ARTERY BY CORONARY		
ENDOTHELIAL SPECIFIC		
PROGENITOR CELLS		
METHOD FOR MEASURING	US 14/123,251	
SOMATIC DNA MUTATIONAL		
PROFILES		

 $<sup>^{76}</sup>$  This patent application is jointly owned with Whitehead Institute for Biomedical Research and President and Fellows of Harvard College.

<sup>&</sup>lt;sup>77</sup> This patent application is jointly owned with MIT and Montefiore Medical University.

<sup>&</sup>lt;sup>78</sup> This patent application is jointly owned with Sloan-Kettering Institute for Cancer Research.

<sup>&</sup>lt;sup>79</sup> This patent application is jointly owned with Ifo-Regina Elena Cancer Institute and MIT.

<sup>&</sup>lt;sup>80</sup> This patent application is jointly owned with British Columbia Cancer Agency.

Title	Application Number	Patent Issued Number
GUT BARRIER DYSFUNCTION	PCT/US13/72709	
TREATMENT AND PREVENTION		
METHODS FOR HIGH	PCT/US13/73275	
THROUGHPUT RECEPTOR:LIGAND		
IDENTIFICATION		
ASSAY FOR INHIBITORS OF	PCT/US14/10626	
EQUILIBRATIVE OR		
CONCENTRATIVE NUCLEOSIDE		
TRANSPORTERS		
METHODS AND COMPOSITIONS	US 14/150,207	
FOR RAPID FUNCTIONAL		
ANALYSIS OF GENE VARIANTS		
STROMAL CELL THERAPY IN	US 14/131,776	
TREATMENT OF RADIATION		
INJURY		
SMALL-MOLECULE BINDING SITE	PCT/US14/11213	
ON PRO-APOPTOTIC BAX		
REGULATES INHIBITION OF BAX		
ACTIVITY	1.G. 1.1(D.2.()	
TARGETS FOR DIAGNOSIS,	US 14/236,118	
PROGNOSIS AND THERAPY OF		
ACUTE MYELOID LEUKEMIA AND		
MYELODYSPLASTIC SYNDROMES	DCT / 1014/16326	
A SELECTIVE HIGH-AFFINITY IMMUNE STIMULATORY REAGENT	PCT/US14/15235	
AND USES THEREOF		
HHLA2 AS A NOVEL INHIBITOR OF	PCT/US14/15308	
HUMAN IMMUNE SYSTEM AND	FC1/US14/13306	
USES THEREOF		
PHOSPHOCOFILIN: COFILIN CO-	US 14/238,253 <sup>81</sup>	
LOCALIZATION INTENSITY AS A	0.5 14/256,255	
PREDICTOR OF METASTATIC		
RECURRENCE		
Tuberculosis Biomarkers and Uses	PCT/US2014/017289	
Thereof	82	
ERYTHROPOIETIC ROLE OF	US 14/189,110 <sup>83</sup>	
RESIDENT MACROPHAGES IN		
HEMATOPOIETIC ORGANS		
METHOD OF TREATING LEUKEMIA	US 14/190,705	
IN A MAMMAL	, , ,	
PAKI INHIBITION FOR	PCT/US14/24239	
TREATMENT OF ACUTE MYELOID		
LEUKEMIA AND		
MYELODYSPLASTIC SYNDROMES		
HUMANIZED ANTIBODIES	PCT/US14/25861 <sup>84</sup>	
SPECIFIC FOR STAPHYLOCOCCAL		
ENTEROTOXIN B		

<sup>&</sup>lt;sup>81</sup> This patent is jointly owned with King's College London.

<sup>&</sup>lt;sup>82</sup> This patent application is jointly owned with Caprion Proteomics Inc.<sup>83</sup> This patent is jointly owned with ICAHN School of Medicine at Mount Sinai.

<sup>&</sup>lt;sup>84</sup> This patent application is jointly owned with Pfizer, Inc.

Title	Application Number	Patent Issued Number
PANEL OF MICRORNA	PCT/US14/27113	and the control of th
BIOMARKERS IN HEALTHY AGING		
ADJUVANT THERAPY FOR	US 14/346,981	
STAPHYLOCOCCAL INFECTION		
WITH ENTEROTOXIN SPECIFIC		
MABS		
CASPASE 9 INHIBITION AND BR12	US 14/347,129	
PEPTIDES FOR TREATING		
DEMENTIA		
SIMULTANEOUS EXTRACTION OF	US 14/249,631	
DNA AND RNA FROM FFPE		
TISSUES		
METHOD FOR MEASURING DNA	US 14/253,922	
METHYLATION PROFILES		
RECOMBINANT	US 14/352,761 <sup>85</sup>	ARRAGAMA
MYCOBACTERIOPHAGES FOR		
DELIVERY OF NUCLEIC ACIDS OF		
INTEREST INTO MYCOBACTERIA		
TREATMENT OF AGING EFFECTS	PCT/US2014/035220	
BY GONADOTROPIN-RELEASING		
HORMONE, NEUROGENESIS OR		
BRAIN IKK-BETA/NF-KAPPAB		
INHIBITION		
METHOD OF TREATING	PCT/US14/35448	
TUBERCULOSIS		
TMIGD2 AND ITS DERIVATIVES AS	US 61/986,238	
BLOCKERS OR BINDERS OF		
CANCER-EXPRESSED HHLA2 FOR		
IMMUNOTHERAPIES		
TARGETING AN AMPHIREGULIN-	US 14/356,724	
DERIVED CELL SURFACE NEO-		
EPITOPE		
IL-34 RECEPTOR ASSAYS AND	PCT/US14/38590	
USES THEREOF	Anananoun	
PEGYLATED HEMOGLOBIN AND	US 14/281,970	
ALBUMIN AND USES THEREOF	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
TREATMENT OF MULTIPLE	US 62/000,577	
SCLEROSIS BY INHIBITION OF		
ALLOGRAFT ONFLAMMATORY		
FACTOR-1		***************************************
Vectors and Composition for Stable	US 62/002,478 <sup>86</sup>	
Expression of Antigens in Mycobacteria	110 110 120 12 12 187	
STAT3 ACTIVATION AS A MARKER	US 14/360,325 <sup>87</sup>	
FOR CLASSIFICATION AND		
PROGNOSIS OF DLBCL PATIENTS	110 1 1/2 1 2 2 2 2 2	
Propylactic Compositions for	US 14/361,030 <sup>88</sup>	
Managment of Microbial Infecions in		
Patients with Brian Injury		

<sup>&</sup>lt;sup>85</sup> This patent is jointly owned with University of Pittsburgh.

<sup>&</sup>lt;sup>86</sup> This patent application is jointly owned with Beth Israel Deaconess Medical Center, Inc. and Duke University.

 $<sup>^{87}</sup>$  This patent application is jointly owned with the Board of Regents of the University of Nebraska.

Title	Application Number	Patent Issued Number
TARGETING DIMERIZATION OF BAX TO MODULATE BAX ACTIVITY	US 62/005,013	
THERAPY FOR FILOVIRUS INFECTION	US 14/291,608 <sup>89</sup>	
LIPID NANOPARTICLES FOR TARGETED SIRNA DELIVERY	US 14/299,194	
TREATMENT OF OBESITY AND PULMONARY ARTERIAL HYPERTENSION USING PROSTAGLANDIN TRANSPORTER INHIBITORS	PCT/US14/42628	
SYNTAC FC-FUSION CONSTRUCTS AND USES THEREOF	US 62/013,715	
Identification of Inhibitors of the Malaria Parasite Plasmodium Falciparum Equilibrative Nucleoside Transporter Type I As Potential Antimalaria Drugs	PCT/US2014/044357	
USE OF TGF-BETA ANTAGONISTS TO TREAT TYPE-2 DIABETES	US 62/026,126	
NEURAL STEM CELL THERAPY FOR OBESITY AND DIABETES	US 14/375,582	
COMPOSITIONS AND METHODS FOR TREATING SMOOTH MUSCLE DYSFUCTION	PCT/US2014/049811	
METHOD OF ENHANCING EFFICACY OF BLOOD TRANSFUSIONS	US 14/454,059 <sup>91</sup>	
THERAPY FOR FILOVIRUS INFECTION	US 62/039,504 <sup>92</sup>	
METHODS AND COMPOSITIONS FOR ASSESSING GERMLINE	US 62/039,691	
NOVEL CELLULAR TARGETS FOR HIV INFECTION	US 14/381,727	
COATING STRATEGIES FOR PARAMAGNETIC NANOPARTICLES FOR TARGETED DELIVERY OF THERAPEUTICS	US 62/047,242	
METHODS AND COMPOSITIONS TO INHIBIT METASTASIS AND TO TREAT FIBROSIS AND TO ENHANCE WOUND HEALING	PCT/US14/55393	
FIDGETIN-LIKE 2 AS A TARGET TO ENHANCE WOUND HEALING	US 14/487,221	

<sup>&</sup>lt;sup>88</sup> This patent application is jointly owned with UTI Limited Partnership.

<sup>&</sup>lt;sup>89</sup> This patent application is jointly owned with the Governing Council of the University of Toronto.

<sup>&</sup>lt;sup>90</sup> This patent application is jointly owned with the Trustees of Columbia University of the City of New York.

<sup>&</sup>lt;sup>91</sup> This patent application is jointly owned with the Regents of the University of California.

<sup>&</sup>lt;sup>92</sup> This patent application is jointly owned with the Governing Council of the University of Toronto.

Title	Application Number	Patent Issued Number
REPOPULATION OF ORGANS AND	US 62/051,214	
TISSUES USING A YAP-ERT2		
FUSION PROTEIN		
Mena INV and Cancer Invasion and	US 14/390,113	
Metastasis		
S-nitrosocaptopril Nanoparticles as	US 62/059,226	
Nitric Oxide-Liberating and	05 02/05/,220	
Transitrosylating Anti-infective		
Technology		
PROGRAMMED CARGO RELEASE	US 62/061,772	
USING NUCLEIC ACID-STABILIZED	03 02/001,772	
MICELLES		
SUSTAINED RELEASE	US 62/064,251	
NANOPARTICLE DELIVERY OF	03 02/004,231	
NITRIC OXIDE (NO) OR S-		
NITROSOTHIOLS AND RELATED		
COMPOUNDS FOR RESTORING		
VASCULAR INTEGRITY		
CYSTEINE CATHEPSIN INHIBITORS	US 62/066,216 <sup>93</sup>	
AS ANTI-EBOLA AGENTS	03 02/000,210	
TRANSFERRIN RECEPTOR	VIC 14/207 102	
1	US 14/396,102	
APTAMERS AND APTAMER-		
TARGETED DELIVERY MULTI-SPECIFIC ANTIBODIES FOR	110 (2/0(0.51/	
CROSS-NEUTRALIZATION OF	US 62/069,516	
MULTIPLE FILOVIRUS		
GLYCOPROTEINS		
NUCLEIC ACID-SCAFFOLDED	PCT/US14/62614	
	FC1/0314/02014	
SMALL MOLECULE LIBRARIES	110 (0/074 202	
Use of Fatty Acids to Enhance Topical	US 62/074,382	
and Systemic Delivery of Nanoparticle Formulations and Methods of Detection		
Company of the Compan	110 (2)/074 702	
METHOD FOR PRODUCING	US 62/074,702	
RADIOBACTERIA FOR THERAPY OF CANCER		
	DOTHIC1 4/74047	
WNT/BETA-CATENIN INHIBITOR-	PCT/US14/64046	
ELUTING ENDOVASCULAR STENT	110 (0 long 000	
METHODS TO ACCELERATE	US 62/076,099	
ANTIBODY DIVERSIFICATION	170 14/200 22/594	
Preparation of nanoparticles Loaded with	US 14/399,335 <sup>94</sup>	
and Capable of Sustained Release of the		
S-nitroso Derivative of N-acetyl		
Cysteine (NACSNO)	110 14/200 ccd	
MYCOBACTERIUM TUBERCULOSIS	US 14/399,557	
DELTA ESX-3 MUTANTS	TTO (6) 10 70 70 70	
T CELL MARKER AND	US 62/078,506	
REGULATION OF T CELL		
RESPONSES THROUGH SIDT1		
RECEPTOR AND USES THEREOF		

<sup>93</sup> This patent application is jointly owned with the Board of Trustees of the Leland Stanford Junior University.

<sup>&</sup>lt;sup>94</sup> This patent application is jointly owned with La Jolla Bioengineering Institute.

Title	Application Number	Patent Issued Number
Diagnosis of Fungal Infections with a Urine Lateral Flow Device	US 14/546,830 <sup>95</sup>	
RECOMBINANT HERPES SIMPLEX VIRUS 2 (HSV-2) VACCINE	US 62/080,663	
HOST AND INTESTINAL MICROBIOTA DERIVED	US 62/082,781	
METABOLOMIC BLOOD PLASMA SIGNATURE FOR PRIOR RADIATION INJURY		
PEPTIDES FOR BLOCKING ILIRAP PROTEIN-PROTEIN INTERACTION AND USES THEREOF FOR TREATMENT OF DISEASE	US 62/083,417	
BTNL9 AND ERMAP FUNCTION AS NOVEL INHIBITORS OF THE IMMUNE SYSTEM AND USES THEREOF	US 62/084,124	
B7X AND ITS DERIVATIVES FOR TREATING AND PREVENTING CARDIOVASCULAR DISEASE	PCT/US2014/069191	
Nanoparticle Based Combination Therapy to Reduce the Mortality and Morbidity Associated with Ebola Infection	US 62/090,140	
RETINOIC ACID RECEPTOR ANTAGONISTS AS CHAPERONE- MEDIATED AUTOPHAGY MODULATORS AND USES THEREOF	US 14/566,762	
METHOD OF RAPID ISOLATION OF APTAMER BEACONS	PCT/US2014/069981	
GENERATION HEPATOCYTES FROM PLURIPOTENT STEM CELLS	US 14/409,234	
Pyrite Shrink-Wrap Laminate as a Hydroxyl Radical Generator	US 62/097,515 <sup>96</sup>	
EPIGENETIC STEM CELL COMMITMENT-ASSOCIATED SIGNATURE	PCT/US2014/072474	
Use of Novel Chloroquine Analogs as Autophagy Inhibitors and Anti-Cancer Drugs	US 62/100,316	
APTAMER-TARGETED ANTIGEN DELIVERY	US 14/413,727	
METHODS OR PREVENTIMNG DRUG SULFATION AND USES THEREOF	US 62/102,170	
METHOD TO TREAT OR PREVENT HERPESVIRUS INFECTION	US 14/415,333	

 $<sup>^{95}</sup>$  This patent application is jointly owned with Johns Hopkins University.  $^{96}$  This patent application is jointly owned with the University of California at Irvine.

Title	Application Number	Patent Issued Number
METHODS TO ISOLATE HUMAN MESENCHYMAL STEM CELLS	US 14/416,078	
CELLULAR PLATFORM FOR RAPID AND COMPREHENSIVE T-CELL IMMUNOMONITORING	PCT/US2015/012160	
ANTI-FILOVIRUS THERAPEUTICS	US 62/111,159 <sup>97</sup>	
TREATMENT OF HELICOBACTER PYLORI INFECTIONS	US 14/419,669 <sup>98</sup>	
TREATMENT OF H. PYLORI INFECTIONS USING MTAN- INHIBITORS	PCT/US2015/014778	
METHODS OF GRADING CARCINOMAS	PCT/US2015/014973	
METHODS OF DETERMINING LEVELS OF EXPOSURE TO RADIATION AND USES THEREOF	US 62/114,456 <sup>99</sup>	
Pyridoxamine for the Treatment of Sickle Cell Disease	PCT/US15/16753 <sup>160</sup>	
METHOD AND ASSAYS FOR TREATING HANTAVIRUS INFECTIONS	PCT/US2015/017410	
RECOMINANT HERPES SIMPLEX VIRUS 2 (HSV-2) VACCINE VECTORS	PCT/US2015/018272	
TREATMENT AND PREVENTION OF P. AERUGINOSA INFECTIONS USING COFORMYCIN ANALOGS	US 14/426,775 <sup>102</sup>	
MULTI-SPECIFIC ANTIBODIES FOR CROSS-NEUTRALIZATION OF MULTIPLE FILOVIRUS GLYCOPROTEINS	US 62/131,472	
USE OF MEMBRANE VESICLE- BASED VACCINE AGAINST M. TUBERCULOSIS	US 14/429,001	
THERAPY FOR RADIATION- INDUCED LUNG INJURY	US 14/666,746	
A THERAPEUTIC AND DIAGNOSTIC TARGET GENE IN ACUTE MYELOID LEUKEMIA	US 14/669,469	
Pegylated non-hypertensive hemoglobins, methods of preparing same, and uses thereof	10/957,200	US 7,144,989
Selective beta-glucuronidase inhibitors as a treatment for side effects of camptothecin antineoplastic agents	13/514,418	US 8,557,808 <sup>103</sup>

<sup>&</sup>lt;sup>97</sup> This patent application is jointly owned with the U.S. Government, Defense Threat Reduction Agency.

<sup>98</sup> This patent is jointly owned with Victoria Link Limited.

<sup>&</sup>lt;sup>99</sup> This patent application is jointly owned with Dana-Farber Cancer Institute, Inc.

<sup>&</sup>lt;sup>100</sup> This patent application is jointly owned with PHD Biosciences.

<sup>&</sup>lt;sup>101</sup> This patent application is jointly owned with The Netherlands Cancer Institute.

<sup>&</sup>lt;sup>102</sup> This patent is jointly owned with Victoria Link Limited.

Title	Application Number	Patent Issued Number
Model of infantile spasm syndrome	12/009,927	US 7,863,499
Surface coil arrays for simultaneous reception and transmission with a volume coil and uses thereof	12/224,478	US 8,030,926
Inhibitors of ADP-ribosyl transferases, cyclases, and hydrolases, and uses thereof	10/038,760	US 7,056,894
Method for decreasing low density lipoprotein	10/377,088	US 6,841,547 <sup>104</sup>
Method of treating or preventing pathologic effects of acute increases in hyperglycemia and/or acute increases of free fatty acid flux	11/136,254	US 8,829,051 <sup>105</sup>
Transition state structure of human 5'methylthioadenosine phosphorylase	13/311,091	US 8,828,124
Compounds and methods for detecting ricin and uses thereof	12/308,447	US 8,536,319
Myosin-IIA S1943 phosphorylation as a marker of tumor invasion	13/419,805	US 8,541,181
Method and compounds for inhibiting lipid biosynthesis of bacteria and plants	08/234,011	US 5,702,935
Antimycobacterial compounds and method of using same	08/386,917	US 5,648,392
Identification of mycobacterium tuberculosis complex species	08/388,916	US 5,656,424
Hepatic progenitors and method of isolating same	09/154,222	US 6,242,252
Methods and compositions for detecting and treating mycobacterial infections using an inha gene	08/241,766	US 5,686,590 <sup>106</sup>
L5 shuttle phasmids	08/247,901	US 5,750,384 <sup>107</sup>
Method for proliferating VY2V&2 T cells	08/390,881	US 5,639,653
Novel hemoglobin crosslinkers	08/425,137	US 5,585,484
Vectors and prokaryotes which autocatalytically delete antibiotic resistance	08/425,380	US 5,736,367
Compositions conprising [sic] hepatocyte precursors	08/751,546	US 5,789,246
Method for detecting chitin-containing organisms	09/193,923	US 6,440,388

 $<sup>^{103}</sup>$  This patent is jointly owned with North Carolina Central University and The University of North Carolina at Chapel Hill.

<sup>&</sup>lt;sup>104</sup> This patent is jointly owned with Montefiore Medical Center and the Research Foundation of State University of New York.

<sup>&</sup>lt;sup>105</sup> This patent is jointly owned with Geoffrey C. Gurtner.

<sup>&</sup>lt;sup>106</sup> This patent is jointly owned with Agresearch, New Zealand Pastoral Agriculture Research Institute Ltd.

<sup>&</sup>lt;sup>107</sup> This patent is jointly owned with the University of Pittsburgh Cathedral of Learning.

Title	Application Number	Patent Issued Number
Aptamer constructs	10/999,686	US 7,700,759
Rhenium-188 and rhenium-186 for treatment of tumors expressing A NA+/I-symporter	10/704,434	US 7,709,613
Drug release coatings on calcium phosphate and uses thereof	US 12/736,605	
Method of treating or preventing pathologic effects of acute increases in hyperglycemia and/or acute increases of free fatty acid flux	US 11/297,808 <sup>108</sup>	
Antibodies to human B7X for treatment of metastatic cancer	US 14/050,512 <sup>109</sup>	
Modulation of hypothalamic Atp- sensitive potassium channels	US 11/884,298	
Vitamin K for prevention and treatment of skin rash secondary to anti-EGFR therapy	US 13/623,625	
SYNTAC POLYPEPTIDES AND USES THEREOF	PCT/US2015/035777	
TARGETING DIMERIZATION OF BAX TO MODULATE BAX ACTIVITY	PCT/US2015/032897	
THERAPY FOR FILOVIRUS INFECTION	PCT/US2015/043927	
TMIGD2 AND IT'S DERIVATIVES AS BLOCKERS OR BINDERS OF CANCER-EXPRESSED HHLA2 FOR IMMUNOTHERPIES	PCT/US2015/027429	
USE OF TGF-BETA ANTAGONISTS TO TREAT TYPE-2 DIABETES	PCT/US2015/040833	
A SELECTIVE HIGH-AFFINITY IMMUNE STIMULATORY REAGENT AND USES THEREOF	14/765,885	
ANTIBODY THERAPEUTICS AGAINST FILOVIRUS INFECTIONS AND USES THEREOF	62/157,104	
ASSAY FOR INHIBITORS OF EQUILIBRATIVE OR CONCENTRATIVE NUCLEOSIDE TRANSPORTERS	14/759,973	
FGF RECEPTOR LIGANDS FOR TREATING DIABETES AND OBESITY	62/181,413	

**PATENT** REEL: 036984 FRAME: 0221

 $<sup>^{108}</sup>$  This patent is jointly owned with Geoffrey C. Gurtner.  $^{109}$  This patent is jointly owned with the Sloan-Kettering Institute for Cancer Research.

<sup>&</sup>lt;sup>110</sup> This patent application is jointly owned with the Governing Council of the University of Toronto. A-27

Title	Application Number	Patent Issued Number
GUT BARRIER DYSFUNCTION	14/729,211	
TREATMENT AND PREVENTION		
IDENTIFICATION AND USE OF NEW	14/442,906111	
TUMOR-PROMOTING GENE IN		
HEMATOLOGICAL MALIGNANCIES		
INTERVENTION FOR	62/174,005	
TENDINOPATHY		
PISTON DEVICE FOR MAGNETIC	62/143,265	
RESONANCE ELASTOGRAPHY AND		
USES THEREOF		
REGENERATION OF CORONARY	14/443,075	
ARTERY BY CORONARY		
ENDOTHELIAL SPECIFIC		
PROGENITOR CELLS		
REVERSAL OF PERSISTENT ROS	62/184,495	
GENERATION AFTER TRANSIENT		
HYPERGLYCEMIA		
SEROLOGIC TEST FOR THE RAPID	14/434,415	
DIAGNOSIS OF ACTIVE		
TUBERCULOSIS	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
SMALL-MOLECULE BINDING SITE	14/760,741	
ON PRO-APOTOTIC BAX		
REGULATES INHIBITION OF BAX		
ACTIVITY		
TMEM ACTIVE TEST AND USES	62/166,730	
THEREOF IN DIAGNOSIS,		
PROGNOSIS AND TREATMENT OF		
TUMORS		
TREATMENT OF CANCER USING	62/153,728	
RECALL ANTIGENS DELIVERED		
BY ATTENUATED BACTERIA		
METHODS AND COMPOSITIONS	PCT/US2015/045856	
FOR ASSESSING GERMLINE RISK		
OF CANCER		

# Jointly Owned Patents with Victoria Link Limited

Title	Country	Status	Application No.	Grant No.	Grant Date
Inhibitors of	United States	Patent	08/949388	5985848	16/11/1999
Nucleoside					
Metabolism					
Inhibitors of	United States	Patent	09/172321	6066722	23/05/2000
Nucleoside					
Metabolism					
Inhibitors of	United States	Patent	09/820,276	6492347	10/12/2002
Nucleoside					
Metabolism					

 $<sup>^{111}</sup>$  This patent application is jointly owned with British Columbia Cancer Agency.  $$\rm A$\mbox{-}28$$ 

PATENT REEL: 036984 FRAME: 0222

Title	Country	Status	Application No.	Grant No.	Grant Date
Inhibitors of	Australia	Patent	10866/99	749098	3/10/2002
Nucleoside					
Metabolism					
Inhibitors of	Korea	Patent	1020007003944	1006374790000	16/10/2006
Nucleoside	110104		1020101000	1100011790000	10/10/2010
Metabolism					
Inhibitors of	Japan	Patent	2000-515909	4451983	5/02/2010
Nucleoside	· · · · · · · · · · · · · · · · · · ·	2			J, 02, 2010
Metabolism					
Inhibitors of	China	Patent	98811489.5	1220695	28/09/2005
Nucleoside		2	1		20,00,200
Metabolism					
Inhibitors of	Canada	Patent	2,305,760	2,305,760	3/06/2008
Nucleoside	Cumau	x atom	2,505,700	2,505,700	3,00,2000
Metabolism					
Inhibitors of	Europe	Patent	98953516.6	1023308	7/09/2005
Nucleoside	Linopo	i wichit	75755510.0	1010000	770972000
Metabolism					
Inhibitors of	United States	Patent	10/932,841	7,211,653	1/05/2007
Nucleoside	Office States	ratem	10/732,641	دردن دعو۱	1103/2007
Metabolism					
Inhibitors of	United States	Patent	10/268652	6803455	12/10/2004
Nucleoside	Office States	raicin	10/200032	0003400	12/10/2004
Metabolism					
Inhibitors of	Austria	Patent	98953516	304019	7/09/2005
Nucleoside	Austria	ratem	76755510	JUT017	110712003
Metabolism					
Inhibitors of	Belgium	Patent	EP 98953516.6	1023308	7/09/2005
Nucleoside	Deigidin	raitm	Ex 989,33310.0	1025500	7/09/2003
Metabolism					
Inhibitors of	Switzerland	Patent	EP 98953516.6	1023308	7/09/2005
Nucleoside	SWIIZCHANG	ratent	EX 70733310.0	1025506	1/03/2003
Metabolism					
Inhibitors of	Cyprus	Patent	98953516.6	1023308	7/09/2005
Nucleoside	Cypius	ratem	98933310.0	1023306	7/09/2003
Metabolism					
Inhibitors of	Germany	Patent	69831499	69831499	13/10/2005
Nucleoside	Germany	ratem	07031477	07631477	13/10/2003
Metabolism					
Inhibitors of	Denmark	Patent	98953516.6	1023308	7/09/2005
Nucleoside	Denmark	ratem	98933310.0	1023306	7/09/2003
Metabolism					
Inhibitors of	Spain	Patent	98953516.6	1023308	7/09/2005
Nucleoside	Spain	ratent	70733310.0	1023308	7/09/2003
Metabolism					
	Finland	Doton*	98953516.6	1022200	7/00/2006
Inhibitors of	rimand	Patent	70933310.0	1023308	7/09/2005
Nucleoside Match align					
Metabolism	<b>3</b> 7	D. c	0005251444	100000	7/00/2025
Inhibitors of	France	Patent	98953516.6	1023308	7/09/2005
Nucleoside					
Metabolism					

Title	Country	Status	Application No.	Grant No.	Grant Date
Inhibitors of Nucleoside Metabolism	Greece	Patent	98953516.6	1023308	7/09/2005
Inhibitors of Nucleoside Metabolism	Italy	Patent	98953516.6	1023308	7/09/2005
Inhibitors of Nucleoside Metabolism	Liechtenstein	Patent	98953516.6	1023308	7/09/2005
Inhibitors of Nucleoside Metabolism	Luxembourg	Patent	98953516.6	1023308	7/09/2005
Inhibitors of Nucleoside Metabolism	Netherlands	Patent	98953516.6	1023308	7/09/2005
Inhibitors of Nucleoside Metabolism	Portugal	Patent	98953516.6	1023308	7/09/2005
Inhibitors of Nucleoside Metabolism	Sweden	Patent	98953516.6	1023308	7/09/2005
Inhibitors of Nucleoside Metabolism	Great Britain	Patent	98953516.6	1023308	7/09/2005
Inhibitors of Nucleoside Metabolism	China	Patent	ZL200510092066. 9	100393722	11/06/2008
Inhibitors of Nucleoside Metabolism	United States	Patent	09/496,741	6,228.847	8/05/2001
Inhibitors of Nucleoside Metabolism	Hong Kong	Patent	6109456.2	HK1089159	11/06/2008
Inhibitors of Nucleoside Metabolism	United States	Patent	11/728,730	7,390,890	24/06/2008
Process for Preparing Inhibitors of Nucleoside Metabolism	Europe	Application	9150953.9		
Process for Preparing Inhibitors of Nucleoside Metabolism	Canada	Patent	2,696,826.00	2,696,826	8/01/2013
Process for Preparing Inhibitors of Nucleoside Metabolism	China	Patent	200610148465.70	200610148465.70	6/10/2010
Process for Preparing Inhibitors of Nucleoside Metabolism	United States	Patent	11/716,100	7,405,297	29/07/2008

Title	Country	Status	Application No.	Grant No.	Grant Date
Process for Preparing Inhibitors of Nucleoside Metabolism	Korea	Patent	1020077002211	100827118	25/04/2008
Process for Preparing Inhibitors of Nucleoside Metabolism	Hong Kong	Patent	6108569.8	HK1088310	28/03/2008
Process for Preparing Inhibitors of Nucleoside Metabolism	Hong Kong	Patent	812704.5	HK1116472	6/10/2010
Process for Preparing Inhibitors of Nucleoside Metabolism	Canada	Patent	2,634,299	2,634,299	31/05/2011
Process for Preparing Inhibitors of Nucleoside Metabolism	Albania	Patent	AL-P-2009-2989	2926	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Austria	Patent	917509.2	E425165	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Belgium	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Cyprus	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Germany	Patent	917509.2	60041757.3	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Denmark	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Spain	Patent	917509.2	2324016	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Finland	Patent	917509.2	1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	France	Patent	917509.2	1165564	11/03/2009

Title	Country	Status	Application No.	Grant No.	Grant Date
Process for Preparing Inhibitors of Nucleoside Metabolism	Great Britain	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Greece	Patent	917509.2	3069168	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Ireland	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Italy	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Lithuania	Patent	917509.2	1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Luxembourg	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Latvia	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Monaco	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Macedonia	Patent	917509.2	MK/P/2009/119	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Netherlands	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Portugal	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Romania	Patent	917509.2	1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Sweden	Patent	917509.2	917509.2	11/03/2009

Title	Country	Status	Application No.	Grant No.	Grant Date
Process for Preparing Inhibitors of Nucleoside Metabolism	Slovenia	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Switzerland	Patent	917509.2	EP1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Japan	Patent	2009-080777	5070237	24/08/2012
Process for Preparing Inhibitors of Nucleoside Metabolism	United States	Patent	09/958,219	6693193	17/02/2000 4
Process for Preparing Inhibitors of Nucleoside Metabolism	Korea	Patent	1020017012816	1007551100000	28/08/2007
Process for Preparing Inhibitors of Nucleoside Metabolism	Japan	Patent	2000-611706	4430247	25/12/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Europe	Patent	917509.2	1165564	11/03/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	China	Patent	808441.6	1196704	13/04/2005
Process for Preparing Inhibitors of Nucleoside Metabolism	Canada	Patent	2368095	2368095	6/10/2009
Process for Preparing Inhibitors of Nucleoside Metabolism	Australia	Patent	38469/00	776540	6/01/2005
Process for Preparing Inhibitors of Nucleoside Metabolism	New Zealand	Patent	514660	514660	5/07/2004
Process for Preparing Inhibitors of Nucleoside Metabolism	United States	Patent	10/737,724	7022852	4/04/2006
Process for Preparing Inhibitors of Nucleoside Metabolism	United States	Patent	11/297,954	7,211,677	1/05/2007

Title	Country	Status	Application No.	Grant No.	Grant Date
Process for Preparing Inhibitors of Nucleoside Metabolism	China	Patent	2005108316.60	100344630	24/10/2007
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Brazil	Application	P10313664.7		
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Russia	Patent	2005107714	2330042	27/07/2008
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Singapore	Patent	200501034.3	110552	30/03/2007
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Korea	Patent	1020057002959	10010812260000	1/11/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	China	Patent	3824354.7	100379750	9/04/2008
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Europe	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	India	Patent	680/DELNP/2005	244827	21/12/2010
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Canada	Patent	2496698	2496698	24/01/2012
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Japan	Patent	2004-530687	4682314	18/02/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Australia	Patent	2003258911	2003258911	4/03/2010
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	United States	Patent	10/524,995	7553839	30/06/2009
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	New Zealand	Patent	538368	538368	13/03/2008

Title	Country	Status	Application No.	Grant No.	Grant Date
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Austria	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Belgium	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Bulgaria	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Cyprus	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Czech Republic	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Denmark	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Estonia	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Finland	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	France	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Germany	Patent	3792904.9	60336734.8	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Greece	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Hungary	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Ireland	Patent	3792904.9	1539783	13/04/2011

Title	Country	Status	Application No.	Grant No.	Grant Date
Inhibitors of Nucleoside Phosphorylases and	Italy	Patent	3792904.9	1539783	13/04/2011
Nucleosidases Inhibitors of Nucleoside Phosphorylases and	Liechtenstein	Patent	3792904.9	1539783	13/04/2011
Nucleosidases Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Luxembourg	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Monaco	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Portugal	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Romania	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Slovakia	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Slovenia	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Spain	Patent	3792904.9	3792904.9	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Sweden	Patent	3792904.9	3792904.9	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Switzerland	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Netherlands	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Turkey	Patent	3792904,9	1539783	13/04/2011

Title	Country	Status	Application No.	Grant No.	Grant Date
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Great Britain	Patent	3792904.9	1539783	13/04/2011
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	Hong Kong	Patent	6105174.1	HK1085219	12/09/2008
Inhibitors of Nucleoside Phosphorylases and Nucleosidases	United States	Patent	12/455537	8,173,662	8/05/2012
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Korea	Application	1020097006628	1014336210000	8/19/2014
Azetidine analogues of Nucleoside Phosphorylase and Hydrolase Inhibitors	United States	Patent	12/448,397	8,283,345	9/10/2012
Acyclic amine inhibitors of 5 - methylthioadenosine phosphorylase and nucleosidase	Europe	Application	7834862		
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Japan	Application	2009-527314		
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Canada	Application	2662628		
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	United States	Application	12/310,708	8,853,224	10/7/2014
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	India	Application	1153/KOLNP/200 9		
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	China	Patent	200780040294.9	101528749	31/07/2013

Title	Country	Status	Application No.	Grant No.	Grant Date
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Australia	Patent	2007293774	2007293774	17/10/2013
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	New Zealand	Patent	575365	575365	5/06/2012
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Europe	Patent	7834863.8	EP2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Hong Kong	Patent	9110497.8	HK1131612	9/12/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Albania	Patent	7834863.8	3691	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Austria	Patent	7834863.8	2057165	16/03/2011
Acyclic Annine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Belgium	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Bosnia/Herzego vina	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Bulgaria	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Croatia	Patent	7834863.8	P20110408T1	16/03/2011

Title	Country	Status	Application No.	Grant No.	Grant Date
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Cyprus	Patent	7834863.8	CY1111507	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Czech Republic	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Denmark	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Estonia	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Finland	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	France	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Great Britain	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Greece	Patent	7834863.8	3075210	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Hungary	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Iceland	Patent	7834863.8	2057165	16/03/2011

Title	Country	Status	Application No.	Grant No.	Grant Date
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Ireland	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Italy	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Latvia	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Lithuania	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Luxembourg	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Macedonia	Patent	7834863.8	903914	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Malta	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Monaco	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Netherlands	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Poland	Patent	7834863.8	2057165	16/03/2011

Title	Country	Status	Application No.	Grant No.	Grant Date
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Portugal	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Romania	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Serbia	Patent	7834863.8	P51864	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Slovakia	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Slovenia	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Switzerland	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Turkey	Patent	7834863.8	2057165	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Spain	Patent	7834863.8	7834863.8	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Sweden	Patent	7834863.8	7834863.8	16/03/2011
Acyclic Amine Inhibitors of Nucleoside Phosphorylases and Hydrolases	Germany	Patent	7834863.8	602007013252.50	16/03/2011

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Title	Country	Status	Application No.	Grant No.	Grant Date
Acyclic Amine Inhibitors of Nucleoside	Liechtenstein	Patent	7834863.8	2057165	16/03/2011
Phosphorylases and Hydrolases					
3-hydroxypyrrolidine Inhibitors of 5- methylthioadenosine phosphorylase and nucleosidase	Hong Kong	Application	12111232.1		
Acyclic amine inhibitors of 5 - methylthioadenosine phosphorylase and nucleosidase	Canada	Application	2662626		
Acyclic amine inhibitors of 5 - methylthioadenosine phosphorylase and nucleosidase	Australia	Patent	2007293773	2007293773	16/05/2013
Acyclic amine inhibitors of 5 - methylthioadenosine phosphorylase and nucleosidase	United States	Patent	12/310597	8383636	26/02/2013
3-hydroxypyrrolidine Inhibitors of 5- methylthioadenosine phosphorylase and nucleosidase	United States	Application	13/383,772		
3-hydroxypyrrolidine Inhibitors of 5- methylthioadenosine phosphorylase and nucleosidase	Canada	Application	2,768,291		
3-hydroxypyrrolidine Inhibitors of 5- methylthioadenosine phosphorylase and nucleosidase	Australia	Application	2010271532		
3-hydroxypyrrolidine Inhibitors of 5- methylthioadenosine phosphorylase and nucleosidase	Japan	Application	2012-520557		
3-hydroxypyrrolidine Inhibitors of 5- methylthioadenosine phosphorylase and nucleosidase	Europe	Application	10800093.6		

Title	Country	Status	Application No.	Grant No.	Grant Date
Analogues of Coformycin and their use for Treating Protozoan Parasite Infections	United States	Patent	12/223,746	8,394,950	12/03/2013
Saporin-L1 Inhibitors and Uses Thereof	United States	Application	12/932,051	8,884,000	
Treatment and Prevention of P. Aeruginosa Infections Using Coformycin Analogs	United States	PCT Application	US2013/058844		
Treatment of Helicobater pylori infections	United States	PCT Application	US2013/053885		
METHODS, ASSAYS AND COMPOUNDS FOR TREATING BACTERIAL INFECTIONS BY INHIBITING METHYLTHIOINOS INE PHOSPHORYLASE	United States	Application	13/884,298		
TREATMENT OF H. PYLORI INFECTIONS USING MTAN- INHIBITORS	United States	PCT Application	US2015/014778		
TREATMENT OF HELICOBACTER PYLORI INFECTIONS	United States	Application	14/419,669		
TREATMENT AND PREVENTION OF P. AERUGINOSA INFECTIONS USING COFORMYCIN ANALOGS	United States	Application	14,426,775		

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## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3572496

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

## **CONVEYING PARTY DATA**

Name	Execution Date
ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY	09/09/2015

#### **RECEIVING PARTY DATA**

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State/Country:	NEW YORK
Postal Code:	10461

#### **PROPERTY NUMBERS Total: 25**

Property Type	Number
Patent Number:	8726046
Patent Number:	8835467
Application Number:	13813163
Application Number:	13775312
PCT Number:	US1328160
Patent Number:	8859499
PCT Number:	US1330355
Application Number:	13803972
Patent Number:	8703496
Application Number:	13845324
Application Number:	13808495
Patent Number:	8716235
Application Number:	61813773
Application Number:	13884298
Application Number:	13885203
Application Number:	13991091
Application Number:	13912266
Application Number:	13979179
Application Number:	13985087
Application Number:	14000995

PATENT REEL: 036984 FRAME: 0238

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