

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4524398

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| JOHN R. MASCOLA | 10/06/2010 |
| XUELING WU | 10/06/2010 |
| YUXING LI | 10/06/2010 |
| MARIO ROEDERER | 10/06/2010 |
| ZHI-YONG YANG | 10/07/2010 |
| GARY NABEL | 10/15/2010 |
| PETER KWONG | 10/06/2010 |
| TONGQING ZHOU | 10/06/2010 |
| MARK CONNORS | 10/15/2010 |
| GILAD OFEK | 10/07/2010 |
| LAWRENCE SHAPIRO | 10/08/2010 |
| JIANG ZHU | 10/07/2010 |
| RICHARD WYATT | 11/24/2010 |
| CARL-MAGNUS HOGERKORP | 11/16/2010 |
| RECEIVING PARTY DATA | |
| Name: | THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES |
| Street Address: | 6011 EXECUTIVE BOULEVARD |
| Internal Address: | SUITE 325, MSC 7660 |
| City: | BETHESDA |
| State/Country: | MARYLAND |
| Postal Code: | 20892-7660 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 15661867 |
| CORRESPONDENCE DATA | |
| Fax Number: | (503)595-5301 |
| <i>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.</i> | |

Phone: 5035955300
Email: sarah.flugum@klarquist.com
Correspondent Name: GREGORY SCOTT, KLARQUIST SPARKMAN, LLP
Address Line 1: 121 SW SALMON STREET
Address Line 2: SUITE 1600
Address Line 4: PORTLAND, OREGON 97204

| | |
|--------------------------------|--------------------|
| ATTORNEY DOCKET NUMBER: | 4239-83948-18 |
| NAME OF SUBMITTER: | GREGORY K. SCOTT |
| SIGNATURE: | /Gregory K. Scott/ |
| DATE SIGNED: | 07/27/2017 |

Total Attachments: 14

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**ASSIGNMENT FOR NIH/FDA INVENTIONS
(NIH OR FDA CO-INVENTORS ONLY)**

WHEREAS, we, John R. Mascola, Richard Wyatt, Xueling Wu, Yuxing Li, Carl-Magnus Hogerkorp, Mario Roederer, Zhi-yong Yang, Gary Nabel, Peter Kwong, Tongqing Zhou, Mark Connors, Gilad Ofek, Lawrence Shapiro and Jiang Zhu [hereinafter **The Inventors**], employees of the National Institutes of Health, a component of the United States Department of Health and Human Services having an address at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, MSC 7660, Bethesda, MD 20892-7660, have made certain inventions as described and claimed in:

U.S. Provisional Patent Application No. 61/246,039, filed on September 24, 2009, entitled "NEUTRALIZING ANTIBODIES TO HIV-1 AND THEIR USE,"

U.S. Provisional Patent Application No. 61/252,613, filed on October 16, 2009, entitled "NEUTRALIZING ANTIBODIES TO HIV-1 AND THEIR USE,"

U.S. Provisional Patent Application No. 61/290,135, filed on December 24, 2009, entitled "NEUTRALIZING ANTIBODIES TO HIV-1 AND THEIR USE,"

U.S. Provisional Patent Application No. 61/346,808, filed on May 20, 2010, entitled "NEUTRALIZING ANTIBODIES TO HIV-1 AND THEIR USE,"

U.S. Provisional Patent Application No. 61/402,314, filed on August 27, 2010, entitled "NEUTRALIZING ANTIBODIES TO HIV-1 AND THEIR USE,"

U.S. Provisional Patent Application No. 61/385,531, filed on September 22, 2010, entitled "NEUTRALIZING ANTIBODIES TO HIV-1 AND THEIR USE," and

PCT Patent Application No. PCT/US2010/050295, filed on September 24, 2010, entitled "NEUTRALIZING ANTIBODIES TO HIV-1 AND THEIR USE."

all of which applications are collectively referred to herein as "the Applications"; and

WHEREAS, we are the applicants named in the above-identified Applications; and

WHEREAS, the inventions described and claimed therein were made under conditions such as to entitle **THE UNITED STATES OF AMERICA, as represented by the Secretary, Department of Health and Human Services** [hereinafter **THE GOVERNMENT**] under Executive Order 10096 and its amendments, 35 U.S.C. §§200-201, §§206-207, and §210 and 37 C.F.R. Part 501 to the entire right, title, and interest in such inventions; and

WHEREAS, THE GOVERNMENT is desirous of acquiring all domestic and foreign right, title, and interest in the inventions described and claimed in the Applications;

NOW, THEREFORE, having the legal obligation to assign our right, title and interest in the inventions described and claimed in the above-identified Patent Applications to **THE GOVERNMENT**, having a place of business at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, MSC 7660, Bethesda, MD 20892-7660 and for consideration, the receipt and sufficiency of which are hereby acknowledged, we hereby assign and transfer to **THE GOVERNMENT**:

the entire right, title, and interest in and to any and all inventions described and claimed in said Applications and any and all Letters Patent which may be granted thereon, and any and all continuations, divisions, reissues or extensions thereof; and

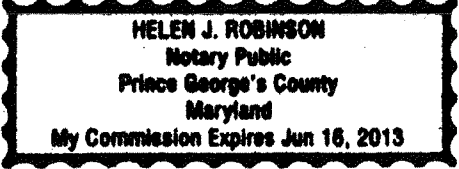
all rights to claim priority on the basis of said Applications including but not limited to applications filed through the provisions of the Patent Cooperation Treaty ("PCT Applications"); and

all applications for Letters Patent that may be filed for any and all inventions described and claimed in said Applications that may be filed in any foreign country and all Letters Patents that may be granted thereon in any foreign country and all extensions, renewals, and reissues thereof; and

any and all such Letters Patents as may be granted in the United States or any foreign country to be held by **THE GOVERNMENT** to the end of the term for which the same would have been held by **The Inventors** had this assignment not been made.

We further agree to make, execute, and deliver to **THE GOVERNMENT**, upon request, any and all papers, documents, affidavits, or other instruments that may be necessary in the prosecution of any application or applications for improvements or reissues of Letters Patent, and to assist **THE GOVERNMENT** in every way as may be requested in protecting said invention. **THE GOVERNMENT** promises to pay any reasonable expenses incurred by **The Inventors** in making, executing and delivering of such papers to **THE GOVERNMENT**.

IN WITNESS WHEREOF we subscribe our hands and seals on the dates shown below:

| | |
|--|--|
| Inventor John R. Mascola | |
| Date <u>6 OCT 2010</u> | X <u>[Signature]</u> Signature |
| County of <u>Montgomery</u> | |
| State of <u>Maryland</u> | |
| Subscribed and sworn to before me this <u>6th</u> day of <u>October</u> , <u>2010</u> . | |
| Seal  | Notary Public for <u>Maryland</u> My Commission Expires: <u>6/16/2013</u> |

Inventor Richard Wyatt

Date _____

X _____
Signature

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Public for

My Commission Expires: _____

Inventor Xueling Wu

Date 10/6/2010

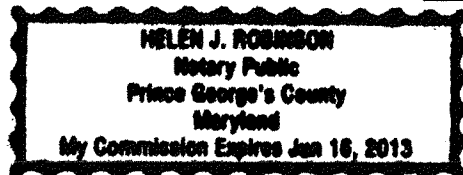
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Signature

County of Montgomery

State of Maryland

Subscribed and sworn to before me this 6th day of October, 2010.

Seal



Notary Public for Maryland
My Commission Expires: 6/16/2013

Inventor Yuxing Li

Date 10/6/10

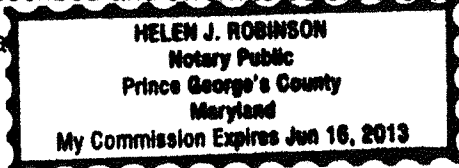
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Signature

County of Montgomery

State of Maryland

Subscribed and sworn to before me this 6th day of October, 2010.

Seal



Notary Public for Maryland
My Commission Expires: 6/16/2013

Inventor Carl-Magnus Hogerkorp

Executed at: _____, this _____ day of _____, 2010.
(city and state)

X _____
Carl-Magnus Hogerkorp

Witnessed
by: _____
Name
(Print): _____
Address: _____

Witnessed
by: _____
Name
(Print): _____
Address: _____

Inventor Mario Roederer

Date 10/6/10

x Mario Reed
Signature

County of

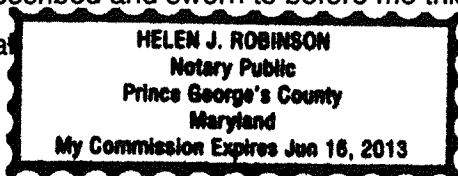
Montgomery

State of

Maryland

Subscribed and sworn to before me this 6th day of October, 2010.

Seal



Notary Public for
Maryland
My Commission Expires:
6/16/2013

Inventor Zhi-yong Yang

Date 10/07/2010

* [Signature]
Signature

County of

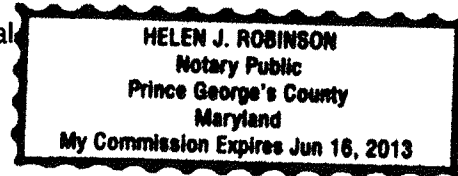
Montgomery

State of

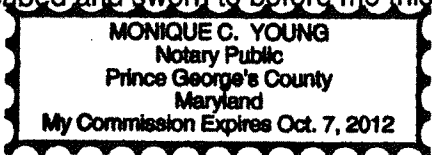
Maryland

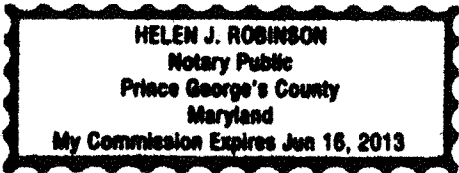
Subscribed and sworn to before me this 7th day of October, 2010.

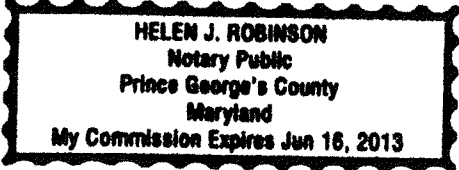
Seal



Notary Public for
Maryland
My Commission Expires:
6/16/2013

| | |
|--|--|
| Inventor Gary Nabel | |
| Date <u>October 15, 2010</u> | x <u>[Signature]</u> Signature |
| County of <u>Montgomery</u> | |
| State of <u>Maryland</u> | |
| Subscribed and sworn to before me this <u>15</u> day of <u>October</u> , <u>2010</u> . | |
| Seal  | Notary Public for <u>Prince George's County</u> My Commission Expires: <u>Oct 7, 2012</u> |

| | |
|--|--|
| Inventor Peter Kwong | |
| Date <u>6 Oct 2010</u> | x <u>[Signature]</u> Signature |
| County of <u>Montgomery</u> | |
| State of <u>Maryland</u> | |
| Subscribed and sworn to before me this <u>6th</u> day of <u>October</u> , <u>2010</u> . | |
| Seal  | Notary Public for <u>Maryland</u> My Commission Expires: <u>6/16/2013</u> |

| | |
|--|--|
| Inventor Tongqing Zhou | |
| Date <u>Oct 6, 2010</u> | x <u>[Signature]</u> Signature |
| County of <u>Montgomery</u> | |
| State of <u>Maryland</u> | |
| Subscribed and sworn to before me this <u>6th</u> day of <u>October</u> , <u>2010</u> . | |
| Seal  | Notary Public for <u>Maryland</u> My Commission Expires: <u>6/16/2013</u> |

Inventor Mark Connors

Date 10/15/2010

x [Signature]
Signature

County of

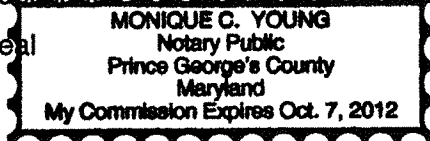
MONTGOMERY

State of

MARYLAND

Subscribed and sworn to before me this 15TH day of OCTOBER, 2010.

Seal



Notary Public for
Prince Georges County Maryland
My Commission Expires:
OCTOBER 7, 2012

Inventor Gilad Ofek

Date 10/7/2010

x [Signature]
Signature

County of

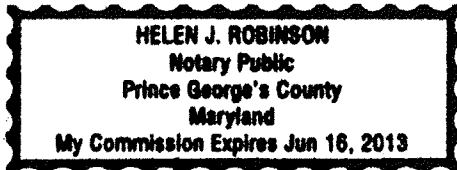
Montgomery

State of

Maryland

Subscribed and sworn to before me this 7TH day of October, 2010.

Seal



Notary Public for
Maryland
My Commission Expires:
6/16/2013

Inventor Lawrence Shapiro

Date 10/8/2010

x [Signature]
Signature

County of

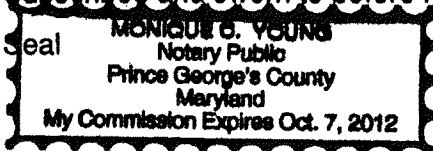
Montgomery

State of

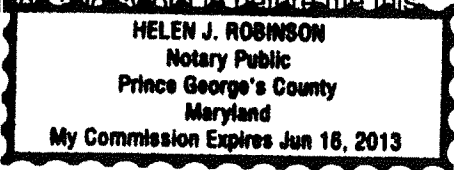
Maryland

Subscribed and sworn to before me this TH day of October, 2010.

Seal



Notary Public for
Prince Georges County Maryland
My Commission Expires:
OCTOBER 7, 2012

| | |
|--|--|
| Inventor Jiang Zhu | |
| Date <u>10/07/2010</u> | x <u>Jiang Zhu</u> Signature |
| County of <u>Montgomery</u> | |
| State of <u>Maryland</u> | |
| Subscribed and sworn to before me this <u>7th</u> day of <u>October</u> , <u>2010</u> . | |
| Seal  | Notary Public for <u>Maryland</u> My Commission Expires: <u>June 16, 2013</u> |

**ASSIGNMENT FOR NIH/FDA INVENTIONS
(NIH OR FDA CO-INVENTORS ONLY)**

WHEREAS, we, John R. Mascola, Richard Wyatt, Xueling Wu, Yuxing Li, Carl-Magnus Hogerkorp, Mario Roederer, Zhi-yong Yang, Gary Nabel, Peter Kwong, Tongqing Zhou, Mark Connors, Gilad Ofek, Lawrence Shapiro and Jiang Zhu [hereinafter **The Inventors**], employees of the National Institutes of Health, a component of the United States Department of Health and Human Services having an address at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, MSC 7660, Bethesda, MD 20892-7660, have made certain inventions as described and claimed in:

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U.S. Provisional Patent Application No. 61/402,314, filed on August 27, 2010, entitled "NEUTRALIZING ANTIBODIES TO HIV-1 AND THEIR USE,"

U.S. Provisional Patent Application No. 61/385,531, filed on September 22, 2010, entitled "NEUTRALIZING ANTIBODIES TO HIV-1 AND THEIR USE," and

PCT Patent Application No. PCT/US2010/050295, filed on September 24, 2010, entitled "NEUTRALIZING ANTIBODIES TO HIV-1 AND THEIR USE."

all of which applications are collectively referred to herein as "the Applications"; and

WHEREAS, we are the applicants named in the above-identified Applications; and

WHEREAS, the inventions described and claimed therein were made under conditions such as to entitle **THE UNITED STATES OF AMERICA, as represented by the Secretary, Department of Health and Human Services** [hereinafter **THE GOVERNMENT**] under Executive Order 10096 and its amendments, 35 U.S.C. §§200-201, §§206-207, and §210 and 37 C.F.R. Part 501 to the entire right, title, and interest in such inventions; and

WHEREAS, THE GOVERNMENT is desirous of acquiring all domestic and foreign right, title, and interest in the inventions described and claimed in the Applications;

NOW, THEREFORE, having the legal obligation to assign our right, title and interest in the inventions described and claimed in the above-identified Patent Applications to **THE GOVERNMENT**, having a place of business at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, MSC 7660, Bethesda, MD 20892-7660 and for consideration, the receipt and sufficiency of which are hereby acknowledged, we hereby assign and transfer to **THE GOVERNMENT**:

the entire right, title, and interest in and to any and all inventions described and claimed in said Applications and any and all Letters Patent which may be granted thereon, and any and all continuations, divisions, reissues or extensions thereof; and

all rights to claim priority on the basis of said Applications including but not limited to applications filed through the provisions of the Patent Cooperation Treaty ("PCT Applications"); and

all applications for Letters Patent that may be filed for any and all inventions described and claimed in said Applications that may be filed in any foreign country and all Letters Patents that may be granted thereon in any foreign country and all extensions, renewals, and reissues thereof; and

any and all such Letters Patents as may be granted in the United States or any foreign country to be held by **THE GOVERNMENT** to the end of the term for which the same would have been held by **The Inventors** had this assignment not been made.

We further agree to make, execute, and deliver to **THE GOVERNMENT**, upon request, any and all papers, documents, affidavits, or other instruments that may be necessary in the prosecution of any application or applications for improvements or reissues of Letters Patent, and to assist **THE GOVERNMENT** in every way as may be requested in protecting said invention. **THE GOVERNMENT** promises to pay any reasonable expenses incurred by **The Inventors** in making, executing and delivering of such papers to **THE GOVERNMENT**.

IN WITNESS WHEREOF we subscribe our hands and seals on the dates shown below:

| | |
|---|---|
| Inventor John R. Mascola | |
| Date _____ | X _____ Signature |
| County of _____ | _____ |
| State of _____ | _____ |
| Subscribed and sworn to before me this _____ day of _____, _____. | |
| Seal | Notary Public for _____ My Commission Expires: _____ |

Inventor Richard Wyatt

Date Nov 24, 2010

x [Signature]
Signature

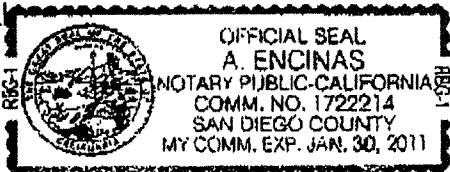
County of

San Diego
CA

State of

Subscribed and sworn to before me this 24th day of November, 2010.

Seal



Notary Public for
[Signature] SD, CA
My Commission Expires:
1-30-2011

Inventor Xueling Wu

Date _____

X _____
Signature

County of

State of

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Public for

My Commission Expires:

Inventor Yuxing Li

Date _____

X _____
Signature

County of

State of

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Public for

My Commission Expires:

| | |
|---|--|
| Inventor Carl-Magnus Hogerkorp | |
| Executed at: <u>MALMÖ, SWEDEN</u> , this <u>16TH</u> day of <u>NOVEMBER</u> 2010. (city and state) | |
| X <u>[Signature]</u> Carl-Magnus Hogerkorp | |
| Witnessed by: <u>Pernille Kewer</u> Name (Print): <u>PERNILLE KEWER</u> Address: <u>3 HANS ANDERSENSVEJ, 3550 SLANGEBÆK</u> <u>DENMARK</u> | Witnessed by: <u>Klaus Stensgaard Frederiksen</u> Name (Print): <u>KLAUS STENSGAARD FREDERIKSEN</u> Address: <u>BILLOWSVEJ 38C 3.th, DK-1870</u> <u>FREDERIKSBERG</u> <u>DENMARK</u> |

| | |
|---|---|
| Inventor Mario Roederer | |
| Date _____ | X _____ Signature |
| County of _____ | _____ |
| State of _____ | _____ |
| Subscribed and sworn to before me this _____ day of _____, _____. | |
| Seal | Notary Public for _____ My Commission Expires: _____ |

| | |
|---|---|
| Inventor Zhi-yong Yang | |
| Date _____ | X _____ Signature |
| County of _____ | _____ |
| State of _____ | _____ |
| Subscribed and sworn to before me this _____ day of _____, _____. | |
| Seal | Notary Public for _____ My Commission Expires: _____ |

Inventor Gary Nabel

Date _____

X _____
Signature

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Public for

My Commission Expires: _____

Inventor Peter Kwong

Date _____

X _____
Signature

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Public for

My Commission Expires: _____

Inventor Tongqing Zhou

Date _____

X _____
Signature

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Public for

My Commission Expires: _____

Inventor Mark Connors

Date _____

X

Signature

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Public for

My Commission Expires: _____

Inventor Gilad Ofek

Date _____

X

Signature

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Public for

My Commission Expires: _____

Inventor Lawrence Shapiro

Date _____

X

Signature

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Public for

My Commission Expires: _____

| | |
|---|---|
| Inventor Jiang Zhu | |
| Date _____ | X _____ Signature |
| County of _____ | _____ |
| State of _____ | _____ |
| Subscribed and sworn to before me this _____ day of _____, _____. | |
| Seal | Notary Public for _____ My Commission Expires: _____ |