

PATENT ASSIGNMENT

Electronic Version v1.1
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">Name</th> <th style="width: 30%;">Execution Date</th> </tr> </thead> <tbody> <tr> <td>Birgitte Binderup Simen</td> <td>03/13/2008</td> </tr> <tr> <td>Christine Lubeski</td> <td>04/03/2008</td> </tr> <tr> <td>Jan Fredrik Simons</td> <td>03/17/2007</td> </tr> </tbody> </table>		Name	Execution Date	Birgitte Binderup Simen	03/13/2008	Christine Lubeski	04/03/2008	Jan Fredrik Simons	03/17/2007		
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RECEIVING PARTY DATA											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Name:</td> <td>454 Life Sciences Corporation</td> </tr> <tr> <td>Street Address:</td> <td>20 Commercial Street</td> </tr> <tr> <td>City:</td> <td>Branford</td> </tr> <tr> <td>State/Country:</td> <td>CONNECTICUT</td> </tr> <tr> <td>Postal Code:</td> <td>06405</td> </tr> </table>		Name:	454 Life Sciences Corporation	Street Address:	20 Commercial Street	City:	Branford	State/Country:	CONNECTICUT	Postal Code:	06405
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PROPERTY NUMBERS Total: 1											
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CORRESPONDENCE DATA											
<p>Fax Number: (212)983-3115 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i></p> <p>Phone: (212) 935-3000 Email: sabelardo@mintz.com Correspondent Name: Mintz Levin Cohn Ferris Glovsky et al. Address Line 1: 666 Third Avenue - 24th Floor Address Line 4: New York, NEW YORK 10017</p>											
ATTORNEY DOCKET NUMBER:	21465-515N02US										
NAME OF SUBMITTER:	Michelle A. Iwamoto										
<p>Total Attachments: 13 source=21465-515N02US - Recordation Form Cover Sheet and Assignment#page1.tif source=21465-515N02US - Recordation Form Cover Sheet and Assignment#page2.tif</p>											

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VIA ELECTRONIC TRANSMITTAL

Date of Transmittal: March 7, 2011

Attorney Docket No. 21465-515N02US

**RECORDATION FORM COVER SHEET
PATENTS ONLY**

FORM PTO-1595

(Rev. 6-93)

OMB No. 0651-0011 (exp. 4/94)

U.S. DEPARTMENT OF COMMERCE

Patent and Trademark Office

Please record the attached original documents or copy thereof.

- | | |
|---|---|
| <p>1. Name of conveying party(ies):</p> <p>Birgitte Binderup Simen
Christine Lubeski
Jan Fredrik Simons</p> <p>Execution Date:
March 13, 2008
April 3, 2008
March 17, 2007</p> <p>Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> | <p>2. Name and address of receiving party(ies)</p> <p>Name:
454 Life Sciences Corporation
20 Commercial Street
Branford, Connecticut 06405</p> <p>Additional name(s) & address(es) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> |
| <p>3. Nature of conveyance:</p> <p><input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Merger
 <input type="checkbox"/> Security Agreement <input type="checkbox"/> Change of Name
 <input type="checkbox"/> Other</p> | |

- 4. Application number(s) or patent number(s):**
- If this document is being filed together with a new application, the execution date of the application is _____
- A. Patent Application No(s):** 12/449,813, filed August 26, 2009
- B. Patent No(s):**
- Additional numbers attached? ☐ Yes ☒ No

- | | |
|--|--|
| <p>5. Name and address of party to whom correspondence Concerning document should be mailed:</p> <p>Name: Ivor R. Elrifi, Esq.
Address: MINTZ, LEVIN, COHN, FERRIS
GLOVSKY and POPEO, P.C.
Customer Number: 35437
666 Third Avenue - 24th Floor
New York, New York 10017</p> | <p>6. Total number of applications and patents involved: [1]</p> <p>7. Total fee (37 CFR 3.41) \$40.00</p> <p><input checked="" type="checkbox"/> Charged to Deposit Account No. 50-0311
 <input checked="" type="checkbox"/> The Commissioner is authorized to charge Deposit Account No: 50-0311, Reference No. 21465-515N02US for any deficiencies.</p> |
|--|--|

DO NOT USE THIS SPACE

- 9. Statement and signature**
To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Michelle A. Iwamoto, Reg. No. 55,296

Michelle A. Iwamoto

March 7, 2011

Name of Person Signing

Signature

Date

Total number of pages including cover sheet, attachments, and document: **(13)**

Mail documents to be recorded with required cover sheet information to:

MAIL STOP ASSIGNMENT RECORDATION SERVICES
Director of the United States Patent and Trademark Office
P. O. Box 1450
Alexandria, VA 22313-1450

ASSIGNMENT

We, **Birgitte Binderup SIMEN, Christine LUBESKI, and Jan Fredrik SIMONS**, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, confirm that we have sold and assigned, and do hereby assign, sell and transfer to **454 LIFE SCIENCES CORPORATION, 20 Commercial Street, Branford, Connecticut 06405, United States of America** and to its successors, assigns and legal representatives, collectively hereinafter referred to as the ASSIGNEE: (1) our entire right, title and interest for the United States and in all countries, in and to any and all inventions, discoveries and applications which are disclosed in the application for United States Letters Patent entitled:

SYSTEM AND METHOD FOR DETECTION OF HIV DRUG RESISTANT VARIANTS

filed with the U.S. Patent and Trademark Office on **14 March 2008** and assigned International Application No. PCT/US2008/063424¹, which was filed as a continuation-in-part of Application Serial No. **11/104,781**, filed on **12 April 2005**, including any subsequently filed utility applications, which claim priority to Application No. **60/918,440**, filed on **16 March 2007**, and Application Serial No. **60/972,387**, filed on **14 September 2007**, which was filed as a continuation-in-part of Application Serial No. **11/104,781**, filed on **12 April 2005** and including any renewals, revivals, reissues, reexaminations, extensions, continuations and divisions thereof and any substitute applications therefor; (2) the full and complete right to file patent applications in the name of the ASSIGNEE, its designee, or in my/our names as the ASSIGNEE, or its designee's election, on the aforesaid inventions, discoveries and applications in all countries of the world; (3) the entire right, title and interest in and to any Letters Patent which may issue thereon in the United States or in any country, and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and (4) the entire right, title and interest in all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the above inventions, discoveries and applications.

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

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

¹ Any attorney or agent of record and any registered attorney or agent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Chrysler Center, 666 Third Avenue, New York, NY 10017, telephone (212) 935-3000, is hereby authorized to insert, when known.

First Inventor : Birgitte Binderup Simen
Application No. : to be assigned
Filed : 14 March 2008
Page 2 of 4

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

We hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

We further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

Date: 3/13/08


Signature of: Birgitte Binderup Simen

IN WITNESS WHEREOF, I, Brian Desany, hereby declare
(Printed Name of Witness)

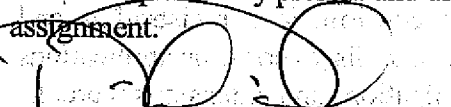
that I was personally present and did see the above named person duly sign and execute the assignment.


(Signature of Witness)

Date: 3/13/08

IN WITNESS WHEREOF, I, David Reeves, hereby declare
(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.


(Signature of Witness)

Date: 13 MAR 2008

First Inventor : Birgitte Binderup Simen
Application No. : to be assigned
Filed : 14 March 2008
Page 3 of 4

Date: _____

Signature of: Christine Lubeski

IN WITNESS WHEREOF, I, _____, hereby declare

(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.

(Signature of Witness)

Date: _____

IN WITNESS WHEREOF, I, _____, hereby declare

(Printed Name of Witness)

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(Signature of Witness)

Date: _____

First Inventor : Birgitte Binderup Simen
Application No. : to be assigned
Filed : 14 March 2008
Page 4 of 4

Date: _____
Signature of: Jan Fredrik Simons

IN WITNESS WHEREOF, I, _____, hereby declare
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assignment.

(Signature of Witness)

Date: _____

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Date: _____

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We, **Birgitte Binderup SIMEN, Christine LUBESKI, and Jan Fredrik SIMONS**, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, confirm that we have sold and assigned, and do hereby assign, sell and transfer to **454 LIFE SCIENCES CORPORATION, 20 Commercial Street, Branford, Connecticut 06405, United States of America** and to its successors, assigns and legal representatives, collectively hereinafter referred to as the ASSIGNEE: (1) our entire right, title and interest for the United States and in all countries, in and to any and all inventions, discoveries and applications which are disclosed in the application for United States Letters Patent entitled:

SYSTEM AND METHOD FOR DETECTION OF HIV DRUG RESISTANT VARIANTS

filed with the U.S. Patent and Trademark Office on **14 March 2008** and assigned International Application No. PCT/US2008/003424¹, which was filed as a continuation-in-part of Application Serial No. **11/104,781**, filed on **12 April 2005**, including any subsequently filed utility applications, which claim priority to Application No. **60/918,440**, filed on **16 March 2007**, and Application Serial No. **60/972,387**, filed on **14 September 2007**, which was filed as a continuation-in-part of Application Serial No. **11/104,781**, filed on **12 April 2005** and including any renewals, revivals, reissues, reexaminations, extensions, continuations and divisions thereof and any substitute applications therefor; (2) the full and complete right to file patent applications in the name of the ASSIGNEE, its designee, or in my/our names as the ASSIGNEE, or its designee's election, on the aforesaid inventions, discoveries and applications in all countries of the world; (3) the entire right, title and interest in and to any Letters Patent which may issue thereon in the United States or in any country, and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and (4) the entire right, title and interest in all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the above inventions, discoveries and applications.

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First Inventor : Birgitte Binderup Simen
Application No. : to be assigned
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Date: _____

Signature of: **Birgitte Binderup Simen**

IN WITNESS WHEREOF, I, _____, hereby declare
(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.

(Signature of Witness)

Date: _____

IN WITNESS WHEREOF, I, _____, hereby declare
(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.

(Signature of Witness)

Date: _____

First Inventor : Birgitte Binderup Simen
Application No. : to be assigned
Filed : 14 March 2008
Page 3 of 4

Date: 4/3/08 Christine Lubeski
Signature of: **Christine Lubeski**

IN WITNESS WHEREOF, I, Dawn E Mather, hereby declare
(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.

Dawn E Mather
(Signature of Witness)

Date: April 3, 2008

IN WITNESS WHEREOF, I, STEPHEN J. OREÑA, hereby declare
(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.

Stephen J. Oreña
(Signature of Witness)

Date: 4/3/08

First Inventor : Birgitte Binderup Simen
Application No. : to be assigned
Filed : 14 March 2008
Page 4 of 4

Date: _____

Signature of: Jan Fredrik Simons

IN WITNESS WHEREOF, I, _____, hereby declare

(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.

(Signature of Witness)

Date: _____

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that I was personally present and did see the above named person duly sign and execute the assignment.

(Signature of Witness)

Date: _____

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Date: _____

Signature of: **Birgitte Binderup Simen**

IN WITNESS WHEREOF, I, _____, hereby declare
(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.

(Signature of Witness)

Date: _____

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First Inventor : Birgitte Binderup Simen
Application No. : to be assigned
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Page 3 of 4

Date: _____

Signature of: Christine Lubeski

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(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.

(Signature of Witness)

Date: _____

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(Signature of Witness)

Date: _____

First Inventor : Birgitte Binderup Simen
Application No. : to be assigned
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Page 4 of 4

Date: 03/17/2008

Jan Fredrik Simons
Signature of: Jan Fredrik Simons

IN WITNESS WHEREOF, I, Iélie DELAHARRE, hereby declare
(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.

Iélie Delaharre
(Signature of Witness)

Date: 3/17/08

IN WITNESS WHEREOF, I, Anna Smed-Sorensen, hereby declare
(Printed Name of Witness)

that I was personally present and did see the above named person duly sign and execute the assignment.

Anna Smed-Sorensen
(Signature of Witness)

Date: 3/17/08