506409769 12/17/2020

PATENT ASSIGNMENT COVER SHEET

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date | |
|------------------|----------------|--|
| BARTON F. HAYNES | 03/17/2016 | |
| HUA-XIN LIAO | 03/17/2016 | |
| M. ANTHONY MOODY | 03/17/2016 | |
| LATONYA WILLIAMS | 03/18/2016 | |
| KEVIN J. WIEHE | 03/17/2016 | |

RECEIVING PARTY DATA

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| State/Country: | NORTH CAROLINA |
| Postal Code: | 27705 |

PROPERTY NUMBERS Total: 1

| Property Type | Number | | | |
|---------------|--------------|--|--|--|
| PCT Number: | US2016023488 | | | |

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| DATE SIGNED: | 12/17/2020 |

PATENT 506409769 REEL: 054683 FRAME: 0653

Total Attachments: 7 source=1234300.182_US2_Executed_Parent_Assignment_(Duke)#page1.tif source=1234300.182_US2_Executed_Parent_Assignment_(Duke)#page2.tif source=1234300.182_US2_Executed_Parent_Assignment_(Duke)#page3.tif source=1234300.182_US2_Executed_Parent_Assignment_(Duke)#page4.tif source=1234300.182_US2_Executed_Parent_Assignment_(Duke)#page5.tif source=1234300.182_US2_Executed_Parent_Assignment_(Duke)#page6.tif source=1234300.182_US2_Executed_Parent_Assignment_(Duke)#page7.tif

PATENT REEL: 054683 FRAME: 0654

ASSIGNMENT

WHEREAS, the undersigned, to wit:

Barton F. HAYNES with address c/o Duke University, 2812 Erwin Road, Suite 306, Durham, North Carolina 27705, UNITED STATES OF AMERICA;

Hua-Xin LIAO with address c/o Duke University, 2812 Erwin Road, Suite 306, Durham, North Carolina 27705, UNITED STATES OF AMERICA;

M. Anthony MOODY with address c/o Duke University, 2812 Erwin Road, Suite 306, Durham, North Carolina 27705, UNITED STATES OF AMERICA;

LaTonya WILLIAMS with address c/o Duke University, 2812 Erwin Road, Suite 306, Durham, North Carolina 27705, UNITED STATES OF AMERICA;

Kevin J. WIEHE with address c/o Duke University, 2812 Erwin Road, Suite 306, Durham, North Carolina 27705, UNITED STATES OF AMERICA;

(hereinafter collectively ASSIGNORS), together with Gilad Adi OFEK have made a certain new and useful invention as set forth in an International patent application, entitled:

"HIV-1 NEUTRALIZING ANTIBODIES AND USES THEREOF"

| (a) | x | which is being filed herewith in the Unite | ed States Patent and Trademark Office; |
|-----|---|--|--|
| (b) | | which was filed as International Patent A | pplication No. |
| | | on ; | |

AND WHEREAS, Duke University (hereinafter ASSIGNEE), a university organized and existing under the laws of the State of North Carolina, and having its principal place of business at 2812 Erwin Road, Suite 306, Durham, North Carolina 27705, is desirous of acquiring the entire right, title, and interest in and to said invention and any and all patents that may be obtained therefor, and in and to said application and any and all patents that may issue therefrom;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, ASSIGNORS do hereby sell, assign, transfer, and set over unto said ASSIGNEE, its successors, assigns, and legal representatives, all right, title, and interest in and to said invention throughout the world, and any and all patents of the United States and foreign countries that may be obtained therefor, including the right to sue for past infringement and obtain past damages, and in and to said application, including any and all continuations, continuations-in-part, divisionals, reissues, re-examinations, substitutions, and extensions thereof, and any and all patents of the United States and foreign countries that may issue therefrom, such right, title, and interest including the right to file applications and obtain patents, utility models, industrial models, and designs for said invention in the name of said ASSIGNEE, its successors, assigns, and legal representatives, throughout the world, including all rights of priority, all rights to publish cautionary notices reserving ownership of said invention, and all rights to register said invention in appropriate registries;

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ASSIGNORS also do hereby covenant that they have the full right to convey the entire right, title, and interest herein assigned, and that they have not and will not execute any agreement in conflict herewith;

ASSIGNORS also do hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all Letters Patent of the United States on said invention or resulting from said application, including any continuations, continuations-in-part, divisions, reissues, resexaminations, substitutions, and extensions thereof, to said ASSIGNEE, its successors, assigns, and legal representatives as the ASSIGNEE of the entire right, title, and interest herein assigned;

ASSIGNORS also do hereby agree to, at any time, upon request, without further or additional consideration but at the expense of said ASSIGNEE, its successors, assigns, or legal representatives, execute and deliver any and all papers, make all rightful oaths, and do all lawful acts that may be necessary or desirable to perfect the entire right, title, and interest in said application, including any and all continuations, continuations-in-part, divisionals, reissues, re-examinations, substitutions, and extensions thereof, and any and all patents of the United States and foreign countries that may issue therefrom said ASSIGNEE, its successors, assigns, and legal representatives, and generally do everything possible to vest the entire right, title, and interest herein assigned in said ASSIGNEE, its successors, assigns, and legal representatives;

ASSIGNORS also do hereby grant the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document:

DUKE UNIVERSITY

All practitioners at Customer Number 134544.

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| 3/17/2016 | May |
|-----------|-------------------|
| Date | Barton F. Haynes |
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| 5/17/2016 | Poppana Georg |
| Date | BILYANA GENRGIEVA |

3/17/2016 Suction here

The Hua-Xin Liao

Witness:

3/17/2016

BILYANA GENREIEUZA

| 17 MAR 2016 | | | | |
|---------------|--------------------|--|--|--|
| Date | M. Anthony Meody | | | |
| Witness: | 0.4 | | | |
| 3 12 2016 | Elyana Gas | | | |
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| 18 march, 206 | Satomya Milliam |
|---------------|-------------------|
| Date | (LaTonya Williams |
| Witness: | |
| 3.18.14 | Allisan Johnson |
| Date | |

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Date

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