505905020 02/07/2020

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5951737

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

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------------|----------------|
| HUA ZHOU | 01/27/2020 |
| XAVIER FRADERA | 01/27/2020 |
| YONGXIN HAN | 01/27/2020 |
| MEREDETH A MCGOWAN | 01/27/2020 |
| NUNZIO SCIAMMETTA | 01/27/2020 |
| CATHERINE WHITE | 01/27/2020 |
| WENSHENG YU | 02/03/2020 |

RECEIVING PARTY DATA

| Name: | MERCK SHARP & DOHME CORP. |
|-------------------|---------------------------|
| Street Address: | 126 EAST LINCOLN AVENUE |
| Internal Address: | RY86-2011A |
| City: | RAHWAY |
| State/Country: | NEW JERSEY |
| Postal Code: | 07065 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16631192 |

CORRESPONDENCE DATA

Fax Number: (732)594-4720

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.

Phone: 7325947338

Email: US_EFS@MERCK.COM

Correspondent Name: MERCK SHARP & DOHME CORP.
Address Line 1: 126 EAST LINCOLN AVENUE

Address Line 2: RY86-2011A

Address Line 4: RAHWAY, NEW JERSEY 07065

ATTORNEY DOCKET NUMBER: 24491-US-PCT

NAME OF SUBMITTER: EMILY LANG

SIGNATURE: /EMILY LANG/

505905020 PATENT REEL: 051748 FRAME: 0696

DATE SIGNED: 02/07/2020 **Total Attachments: 17** source=24491USPCT-ASSIGN-07FEB2020#page1.tif source=24491USPCT-ASSIGN-07FEB2020#page2.tif source=24491USPCT-ASSIGN-07FEB2020#page3.tif source=24491USPCT-ASSIGN-07FEB2020#page4.tif source=24491USPCT-ASSIGN-07FEB2020#page5.tif source=24491USPCT-ASSIGN-07FEB2020#page6.tif source=24491USPCT-ASSIGN-07FEB2020#page7.tif source=24491USPCT-ASSIGN-07FEB2020#page8.tif source=24491USPCT-ASSIGN-07FEB2020#page9.tif source=24491USPCT-ASSIGN-07FEB2020#page10.tif source=24491USPCT-ASSIGN-07FEB2020#page11.tif source=24491USPCT-ASSIGN-07FEB2020#page12.tif source=24491USPCT-ASSIGN-07FEB2020#page13.tif source=24491USPCT-ASSIGN-07FEB2020#page14.tif source=24491USPCT-ASSIGN-07FEB2020#page15.tif source=24491USPCT-ASSIGN-07FEB2020#page16.tif source=24491USPCT-ASSIGN-07FEB2020#page17.tif

> PATENT REEL: 051748 FRAME: 0697

WORLDWIDE ASSIGNMENT

WHEREAS, I/WE,

- (1) Hua Zhou, located at Acton, MA
- (2) Xavier Fradera, located at Brookline, MA
- (3) Yongxin Han, located at Needham, MA
- (4) Meredeth A. McGowan, located at Boston, MA
- (5) Nunzio Sciammetta, located at Sudbury, MA
- (6) Catherine White, located at Newton Center, MA
- (7) Wensheng Yu, located at Edison, NJ

(hereinafter ASSIGNOR(S)), is/are the inventor(s) of the invention described in an application for Patents having the Attorney Docket Number indicated above and the following Title of the Invention:

NOVEL SUBSTITUTED PYRIDINYL COMPOUNDS AS INDOLEAMINE 2,3-DIOXYGENASE (IDO) INHIBITORS and/or in the following application(s):

- U.S. Provisional Application No. <u>62/540,318</u> filed on <u>August 2, 2017</u>;
 U.S. Application No. <u>16/631,192</u> having a filing date of <u>January 15, 2020</u>; and PCT International Application No. <u>PCT/US2018/044274</u> having a filing date of <u>July 30, 2018</u>

WHEREAS I/WE covenant that the rights and property herein conveyed are free and clear of any encumbrance, and that I/we have the full right to convey the same as herein expressed.

WHEREAS, Merck Sharp & Dohme Corp., a corporation organized under the laws of the State of New Jersey, having an office at 126 East Lincoln Avenue, Rahway, New Jersey 07065, and its successors, assigns and legal representatives (hereinafter ASSIGNEE), is desirous of obtaining the entire right, title and interest in, to and under the invention disclosed in said application or applications;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I/we, said ASSIGNOR(S), do each hereby sell, assign and transfer or confirm the grant and assignment to said ASSIGNEE my/our entire right, title and interest in all countries of the world in and to my/our invention described in said application for Patents, in and to the right to file patent applications in the name of ASSIGNEE, its designee, or in any or all of our names, at its election, on the aforesaid invention in all countries of the world, together with all rights of priority in the aforesaid countries deriving from the above-identified application for Patents under the International Convention for the Protection of Industrial Property, under the Inter-American Convention relating to Inventions, Patents, Designs and Industrial Models and under any other international arrangement relating to patents or intellectual property, in and to any and all Letters Patent that are granted from the aforesaid application for Patents, in and to any applications claiming priority benefits to a provisional patent application or other applications filed on said invention, and in and to any continuations, divisions, reexaminations, reissues, renewals and extensions thereof of any of said Letters Patent, the same to be held and enjoyed by said ASSIGNEE, to the full ends of the terms for which all Letters Patent therefore may be granted, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made.

AND I/WE HEREBY covenant and agree that we will at any time, upon the request and at the expense of ASSIGNEE, without further compensation or charge to said ASSIGNEE, execute and deliver any and all documents that may be necessary or desirable to perfect the title to the foregoing invention, patent applications, and Letters Patent and continuations, divisions, reexaminations, reissues, renewals and extensions thereof in the name of ASSIGNEE, including the execution and procurement of any and all further documents evidencing this assignment and sale as may be necessary or desirable for recording the same in the Patent Office of any country concerned, and will make all rightful oaths and declarations and do all lawful acts requisite for procuring the same or for aiding therein.

I/WE HEREBY authorize ASSIGNEE to insert in this instrument the Application Number(s) and the filing date(s) of said application for Patents when officially notified thereof.

This document may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such components shall together constitute but one and the same document.

Computer Generated Template "Assignment-Merck Sharp & Dohme, Single Assignee Worldwide" (Assignment) Merck Sharp & Dohme Corp. 11/04/2010

| Executed this 27 day of, 2020. |
|--|
| Hua Zhou |
| ACKNOWLEDGEMENT |
| Commonwealth of Massachusetts |
| County of Suffolk |
| On this 27th day of <u>Jawway</u> , 2020, before me, the undersigned notary public, personally |
| appeared Hua Zhou, proved to me through satisfactory evidence of identification, which was |
| Merce is signed on the preceding document, and |
| acknowledged to me that he/she signed it voluntarily for its stated purpose. |
| (Seal) Notary Public: |
| |
| JEANNE F. CALLINAN Company Public My Company Expires Season 25, 25, 252 |

Xavier Fradera

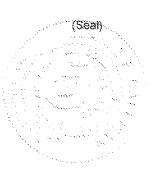
ACKNOWLEDGEMENT

Commonwealth of Massachusetts

County of Suffolk

day of <u>January</u>, 2020, before me, the undersigned notary public, personally appeared Xavier Fradera, proved to me through satisfactory evidence of identification, which was _____, to be the person whose name is signed on the preceding document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

Notary Public:



JEANNE F. CALLINAN

COMMONSMENT OF MASSACRACITIES

My Commission Expires

September 23, 2022

| Executed this 2 day of <u>Can</u> | , 2020. |
|--|--|
| Yondxin-Han | |
| ACKNOWLEDGEMENT | |
| Commonwealth of Massachusetts | |
| appeared Yongxin Han, proved to me the | value , 2020, before me, the undersigned notary public, personally rough satisfactory evidence of identification, which was to be the person whose name is signed on the preceding document, and |
| acknowledged to me that he/she signed | a /1 |
| (Seai) | Seanné Hallinan |
| | Notary Public: |
| | JEANNE F. CALLINAN NOTATION Public |

| Executed this 27 day of 301 |) |
|--|--|
| Commonwealth of Massachusett | |
| appeared Meredeth A. McGowar <u>MCCK_LD</u> | January, 2020, before me, the undersigned notary public, personally in proved to me through satisfactory evidence of identification, which was, to be the person whose name is signed on the preceding document, and signed it voluntarily for its stated purpose. |
| (Seal) | Denné Hallinan |
| | Notary Public: JEANNE F. CALLINAN Notary Public Commonwealth of Massachusetts My Commonwealth of Massachusetts My Commonwealth 22, 2022 |

| Executed this 2 day of 5/44 - 441 | <u>i ,</u> 2020. |
|---------------------------------------|--|
| Nunzio Sciammetta | |
| ACKNOWLEDGEMENT | |
| Commonwealth of Massachusetts | |
| appeared Nunzio Sciammetta, proved to | (2004), 2020, before me, the undersigned notary public, personally methrough satisfactory evidence of identification, which was , to be the person whose name is signed on the preceding document, and |
| acknowledged to me that he/she signed | it voluntarily for its stated purpose. |
| (Seal) | Deanni Hallinan |
| | JEANNE F. CALLINAN COMPANY Public Pub |

| Executed this <u>/ 7</u> day of <u>JATMAYA</u> , 2020. | |
|--|--|
| Commendate | |
| Catherine White | |
| | |
| * WITCH * WITCH WI | |
| ACKNOWLEDGEMENT | |
| Commonwealth of Massachusetts | |

County of Suffolk

On this 27 day of 13114019, 2020, before me, the undersigned notary public, personally appeared Catherine White, proved to me through satisfactory evidence of identification, which was to be the person whose name is signed on the preceding document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

(Seal)

JEANNE F. CALLINAN
Notary Public
COMMONWEAUTH OF MASSACHUSETTS
My Commission Expires
September 22, 2022

| Executed this day of | , 2020 | |
|----------------------|--|--|
| | | |
| ACKNOWLEDGEMENT | | |
| | oove named to me known and known oing instrument in my presence and acknowledged said in day of, 2020. | |
| Witness 1: | Witness 2: | |
| Signature: | Signature: | |
| Name: | Name: | |
| Date: | Date: | |

WORLDWIDE ASSIGNMENT

WHEREAS, I/WE,

- (1) Hua Zhou, located at Acton, MA
- (2) Xavier Fradera, located at Brookline, MA
- (3) Yongxin Han, located at Needham, MA
- (4) Meredeth A. McGowan, located at Boston, MA
- (5) Nunzio Sciammetta, located at Sudbury, MA
- (6) Catherine White, located at Newton Center, MA
- (7) Wensheng Yu, located at Edison, NJ

(hereinafter ASSIGNOR(S)), is/are the inventor(s) of the invention described in an application for Patents having the Attorney Docket Number indicated above and the following Title of the Invention:

NOVEL SUBSTITUTED PYRIDINYL COMPOUNDS AS INDOLEAMINE 2,3-DIOXYGENASE (IDO) INHIBITORS

and/or in the following application(s):

- U.S. Provisional Application No. 62/540,318 filed on August 2, 2017;
- U.S. Application No. 16/631,192 having a filing date of January 15, 2020; and
- PCT International Application No. PCT/US2018/044274 having a filing date of July 30, 2018

WHEREAS I/WE covenant that the rights and property herein conveyed are free and clear of any encumbrance, and that I/we have the full right to convey the same as herein expressed.

WHEREAS, Merck Sharp & Dohme Corp., a corporation organized under the laws of the State of New Jersey, having an office at 126 East Lincoln Avenue, Rahway, New Jersey 07065, and its successors, assigns and legal representatives (hereinafter **ASSIGNEE**), is desirous of obtaining the entire right, title and interest in, to and under the invention disclosed in said application or applications;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I/we, said ASSIGNOR(S), do each hereby sell, assign and transfer or confirm the grant and assignment to said ASSIGNEE my/our entire right, title and interest in all countries of the world in and to my/our invention described in said application for Patents, in and to the right to file patent applications in the name of ASSIGNEE, its designee, or in any or all of our names, at its election, on the aforesaid invention in all countries of the world, together with all rights of priority in the aforesaid countries deriving from the above-identified application for Patents under the International Convention for the Protection of Industrial Property, under the Inter-American Convention relating to Inventions, Patents, Designs and Industrial Models and under any other international arrangement relating to patents or intellectual property, in and to any and all Letters Patent that are granted from the aforesaid application for Patents, in and to any applications claiming priority benefits to a provisional patent application or other applications filed on said invention, and in and to any continuations, divisions, reexaminations, reissues, renewals and extensions thereof of any of said Letters Patent, the same to be held and enjoyed by said ASSIGNEE, to the full ends of the terms for which all Letters Patent therefore may be granted, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made.

AND I/WE HEREBY covenant and agree that we will at any time, upon the request and at the expense of **ASSIGNEE**, without further compensation or charge to said **ASSIGNEE**, execute and deliver any and all documents that may be necessary or desirable to perfect the title to the foregoing invention, patent applications, and Letters Patent and continuations, divisions, reexaminations, reissues, renewals and extensions thereof in the name of **ASSIGNEE**, including the execution and procurement of any and all further documents evidencing this assignment and sale as may be necessary or desirable for recording the same in the Patent Office of any country concerned, and will make all rightful oaths and declarations and do all lawful acts requisite for procuring the same or for aiding therein.

I/WE HEREBY authorize **ASSIGNEE** to insert in this instrument the Application Number(s) and the filing date(s) of said application for Patents when officially notified thereof.

This document may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such components shall together constitute but one and the same document.

Computer Generated Template "Assignment-Merck Sharp & Dohme. Single Assignee Worldwide" (Assignment) Merck Sharp & Dohme Corp. 11/04/2010

| Executed this day o | f | , 2020. |
|----------------------|-----------|--|
| Hua Zhou | | |
| ACKNOWLEDGEMENT | | |
| Commonwealth of Mass | achusetts | |
| County of Suffolk | | |
| | | , 2020, before me, the undersigned notary public, personally isfactory evidence of identification, which was |
| | | e the person whose name is signed on the preceding document, and ntarily for its stated purpose. |
| (Seal) | | |
| | | Notary Public: |

| Executed this d | ay of | , 2020. |
|---------------------|--------------------------|--|
| Xavier Fradera | | |
| ACKNOWLEDGEME | ENT | |
| Commonwealth of M | lassachusetts | |
| County of Suffolk | | |
| appeared Xavier Fra | adera, proved to me thro | , 2020, before me, the undersigned notary public, personally bugh satisfactory evidence of identification, which was be the person whose name is signed on the preceding document, and |
| | | oluntarily for its stated purpose. |
| (Seal) | | |
| | | Notary Public: |

| Executed this da | ay of | , 2020. |
|--------------------|-----------------------|---|
| Yongxin Han | | |
| ACKNOWLEDGEME | NT | |
| Commonwealth of M | lassachusetts | |
| County of Suffolk | | |
| appeared Yongxin H | an, proved to me thro | , 2020, before me, the undersigned notary public, personally ugh satisfactory evidence of identification, which was o be the person whose name is signed on the preceding document, and |
| | | voluntarily for its stated purpose. |
| (Seal) | | |
| | | Notary Public: |

| Executed this | _day of | , 2020. | | | |
|-------------------|--------------------|-------------------------------|-------------------------|---|-----|
| Meredeth A. McGo | wan | | | | |
| ACKNOWLEDGE | MENT | | | | |
| Commonwealth of | f Massachusetts | | | | |
| County of Suffolk | | | | | |
| appeared Merede | th A. McGowan, pro | ved to me through satisf | factory evidence of ide | d notary public, personally entification, which was n the preceding document, | and |
| | | ed it voluntarily for its sta | | , and processing accounting | |
| (Seal) | | | | | |
| | | Notary Public | | | |

| Executed this day of | , 2020. |
|---|---|
| Nunzio Sciammetta | |
| ACKNOWLEDGEMENT | |
| Commonwealth of Massachusetts | |
| County of Suffolk | |
| appeared Nunzio Sciammetta, proved to me | , 2020, before me, the undersigned notary public, personally through satisfactory evidence of identification, which was be the person whose name is signed on the preceding document, and |
| acknowledged to me that he/she signed it ve | |
| (Seal) | |
| | Notary Public: |

| Executed this | day of | , 2020. |
|-------------------|--------------------|---|
| Catherine White | | |
| ACKNOWLEDGEM | ENT | |
| Commonwealth of | Massachusetts | |
| County of Suffolk | | |
| appeared Catherin | e White, proved to | , 2020, before me, the undersigned notary public, personally me through satisfactory evidence of identification, which was, to be the person whose name is signed on the preceding document, ar |
| | | ed it voluntarily for its stated purpose. |
| (Seal) | | |
| | | Notary Public: |

| Executed this 3rd day of Feb., 20 | 20 | | |
|---|-----------------------------|--|--|
| ACKNOWLEDGEMENT Personally appeared before me the above named to be the person who executed the foregoing instrument in my presence and acknowledged said instrument to be his/her free act and deed this day of 2020. | | | |
| Witness Signature: | Witness 2: Signature: Name: | | |
| Date: COMMAN | Date: 2 2 2020 | | |

Page 8 of 8
Computer Generated Temprate "Assignment-Merck Sharp & Dohnte: Single Assignee Worldards" (Assignment Merck Sharp & Dohnte: Corp. 11/04/2010)

Accepted and agreed to by ASSIGNEE Merck Sharp & Dohme Corp.

Signature: List List Catherine D. Fitch

Title: Managing Counsel, Patents

Date: <u>ネ (カ) なっ & ク</u>

ACKNOWLEDGEMENT

STATE OF NEW JERSEY) s.s.:
County of UNION)

EMILY LANG
NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPITES
NOVEMBER 30, 2023

PATENT REEL: 051748 FRAME: 0714