## 504511361 08/21/2017

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4558066

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
DONG-MENG SHEN	07/27/2017
RONGZE KUANG	07/26/2017
PUNEET KUMAR	08/04/2017
JOSEPH L. DUFFY	07/26/2017
MENG YANG	07/26/2017
JOHN S. DEBENHAM	07/26/2017
CHENG ZHU	07/26/2017
AMJAD ALI	07/26/2017

## **RECEIVING PARTY DATA**

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

## **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	15681478

#### **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:** 732-594-4488 **Email:** us-efs@merck.com

Correspondent Name: MERCK

Address Line 1: P O BOX 2000

Address Line 4: RAHWAY, NEW JERSEY 07065-0907

ATTORNEY DOCKET NUMBER:	24360-US-NP
NAME OF SUBMITTER:	MICHELLE A. SISKO
SIGNATURE:	/Michelle A. Sisko/

PATENT 504511361 REEL: 043341 FRAME: 0324

DATE SIGNED:	08/21/2017
Total Attachments: 15	
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PATENT REEL: 043341 FRAME: 0325

#### WORLDWIDE ASSIGNMENT

#### WHEREAS, I/WE,

- (1) Dong-Ming Shen, located at Edison, NJ,
- (2) Rongze Kuang, located at Green Brook, NJ,
- (3) Puneet Kumar, located at Edison, NJ,
- (4) Joseph L. Duffy, located at Cranford, NJ,
- (5) Cheng Zhu, located at Edison, NJ,
- (6) Amjad Ali, located at Freehold, NJ,
- (7) Meng Yang, located at Edison, NJ,
- (8) John S. Debenham, located at Scotch Plains, 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:

## **FACTOR XIa INHIBITORS**

and/or in the following application(s):

U.S. Provisional Application No. 62/377	,969 filed on 08/22/2016;	
U.S. Application No.	having a filing date of	; and
PCT International Application No.	having a filing	date of

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 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.

IWE 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. Multiple Assignees Worldwide" (Assignment) Merck Sharp & Dohme Corp. 07/09/2010

Executed this day of	, 2017.
Dong-Ming Shen	<del></del>
ACKNOWLEDGEMENT	
State of New Jersey	)
County of Union	) s.s.: )
On this day of and known by me to be the same person d that he (she) executed the same, of his (he	, 2017, personally appeared before me <b>Dong-Ming Shen</b> to me known, escribed in and who executed the foregoing instrument, and acknowledged r) own free will for the purpose set forth.
(Seal)	
	Notary Public
Executed this day of Rongže Kuang	, 2017.
ACKNOWLEDGEMENT	
State of New Jersey	` }
County of Ornors	) s.s.: )
On this day of and known by me to be the same person do that he (she) executed the same, of his (he	, 2017, personally appeared before me <b>Rongze Kuang</b> to me known, escribed in and who executed the foregoing instrument, and acknowledged r) own free will for the purpose set forth.
(Seal)	Santagripum.
	_ larya Tour
	Notary Public

TANYA L. TORRES NOTARY PUBLIC OF NEW JERSEY My Commission Expires June 3, 2021

Executed this day of	_, 2017.
Puneet Kumar	<del></del>
ACKNOWLEDGEMENT	
State of New Jersey )	S.S.:
County of Union	
On this day of and known by me to be the same person des that he (she) executed the same, of his (her)	, 2017, personally appeared before me <b>Puneet Kumar</b> to me known, cribed in and who executed the foregoing instrument, and acknowledged own free will for the purpose set forth.
(Seal)	
	Notary Public
Executed this 36 day of 50 V	
ACKNOWLEDGEMENT	
State of New Jersey )	.s.:
County of Union j	
On this day of day of and known by me to be the same person described that he (she) executed the same, of his (her)	, 2017, personally appeared before me <b>Joseph L. Duffy</b> to me known, cribed in and who executed the foregoing instrument, and acknowledged own free will for the purpose set forth.
(Seal)	Emplified
	Nofary Public
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TANYA L. TORRES NOTARY PUBLIC OF NEW JERSEY My Commission Expires June 3, 2021

Executed this day of 1	2017.
1	
Meng Yang	
ACKNOWLEDGEMENT	
State of New Jersey	) ) s.s.:
County of Union	)
On this day of how with the same person de he (she) executed the same, of his (her	2017, personally appeared before me <b>Meng Yang</b> to me known, and scribed in and who executed the foregoing instrument, and acknowledged that own free will for the purpose set forth.
(Seal)	
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	Notáry Public
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Sa.	TANYA L. TORRES NOTARY PUBLIC OF NEW JERSEY
	My Commission Expires June 3, 2021
Executed this day of J	, 2017.
1 = 00	
John S. Debenham	
ACKNOWLEDGEMENT	
State of New Jersey	).
County of Union	) s.s.: )
On this <u>26</u> day of <u>J</u>	* 2017
known, and known by me to be the same	e person described in and who executed the foregoing instrument, and
acknowledged that he (she) executed the	ne same, of his (her) own free will for the purpose set forth.
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(Seal)	Kangapan Capatan
	Tany a Tour
	Nogary Public
	TANYAL TORRES
	ARREST TO A STATE OF THE PROPERTY OF THE PROPE
who is a second of the second	My Commission Expires June 3, 2021

Executed this Aday of July, 2017	<b>.</b>
Cheng Zhu	
ACKNOWLEDGEMENT	
State of New Jersey )	
County of Union ) s.s.:	
On this day of day of , 2 known by me to be the same person described in an he (she) executed the same, of his (her) own free w	017, personally appeared before me <b>Cheng Zhu</b> to me known, and nd who executed the foregoing instrument, and acknowledged that ill for the purpose set forth.
(Seal)	
According to the second	Capture and Capture
	Notary Public
	***************************************
And the second s	TANYA L. TORRES NOTARY PUBLIC OF NEW JERSEY My Commission Expires June 3, 2021
	NOTARY PUBLIC OF NEW JEKSET
	Mile County Courses marked on a great at the second
Executed this 25 day of 5 dy 2017	•
Amjad Ali	
ACKNOWLEDGEMENT	
State of New Jersey )	
County of Union ) s.s.:	
·	017, personally appeared before me Amjad Ali to me known, and
known by me to be the same person described in ar he (she) executed the same, of his (her) own free wi	nd who executed the foregoing instrument, and acknowledged that
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(Seal)	Times Torre
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	Nofary Public
	TANYAL TORRES NOTABY PUBLIC CHIEW JERSEY
	MOTARY PUBLIC CONEW JERSEY

NOTARY PUBLIC OF NEW JERSEY My Commission Expires June 3, 2021

#### WORLDWIDE ASSIGNMENT

#### WHEREAS, I/WE,

- (1) Dong-Ming Shen, located at Edison, NJ,
- (2) Rongze Kuang, located at Green Brook, NJ,(3) Puneet Kumar, located at Edison, NJ,
- (4) Joseph L. Duffy, located at Cranford, NJ,
- (5) Cheng Zhu, located at Edison, NJ,
- (6) Amjad Ali, located at Freehold, NJ,
- (7) Meng Yang, located at Edison, NJ,
- (8) John S. Debenham, located at Scotch Plains, 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:

## **FACTOR XIa INHIBITORS**

and/or in the following application(s):

U.S. Provisional Application No. 62/377,	969 filed on 08/22/2016;	
U.S. Application No.	having a filing date of	; and
PCT International Application No.	having a filing	date of

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. Multiple Assignees Worldwide" (Assignment) Merck Sharp & Dohme Corp. 07/09/2010

Executed this 27th day of July , 2017.
D An
Dong-Ming Shen
ACKNOWLEDGEMENT
State of New Jersey )
) s.s.: County of Union )
On this 21 <sup>th</sup> day of, 2017, personally appeared before me <b>Dong-Ming Shen</b> to me known, and known by me to be the same person described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.
(Seal)
NASER BATAH NOTARY PUBLIC OF NEW JERSEY Notary Public Ny Cormission Expires 4/21/2020
Executed this day of, 2017.
Rongze Kuang
ACKNOWLEDGEMENT
State of New Jersey )
County of Union ) s.s.:
On this day of, 2017, personally appeared before me Rongze Kuang to me known, and known by me to be the same person described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.
(Seal)
Notary Public

Executed this	day of	, 2017.
Puneet Kumar	**************************************	
ACKNOWLEDGEN	IENT	
State of New Jersey	<b>V</b>	)
County of Union		) s.s.: )
	day of	, 2017, personally appeared before me <b>Puneet Kumar</b> to me known,
and known by me to	be the same pers	on described in and who executed the foregoing instrument, and acknowledged s (her) own free will for the purpose set forth.
(Seal)		
		Notary Public
		,
Executed this	day of	, 2017.
Joseph L. Duffy	***************************************	
ACKNOWLEDGEM	ENT	
State of New Jersey	/	)
County of Union		) s.s.: )
and known by me to	be the same pers	, 2017, personally appeared before me <b>Joseph L. Duffy</b> to me known, on described in and who executed the foregoing instrument, and acknowledged is (her) own free will for the purpose set forth.
(Seal)		
( /		
		Notary Public

Executed this da	y of	, 201	17.
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Cheng Zhu			
ACKNOWLEDGEME	TV		
State of New Jersey		)	
County of Union		) s.s.: )	
known by me to be the	e same person desc	ribed in a	2017, personally appeared before me <b>Cheng Zhu</b> to me known, and and who executed the foregoing instrument, and acknowledged that will for the purpose set forth.
(Seal)			
			Notary Public
Executed this da	y of	, 201	7.
Amjad Ali			
ACKNOWLEDGEMEN	NT.		
State of New Jersey		)	
County of Union		) s.s.: )	
known by me to be the	same person desc	ribed in a	2017, personally appeared before me <b>Amjad Ali</b> to me known, and and who executed the foregoing instrument, and acknowledged that will for the purpose set forth.
(Seal)			
			Notary Public

Executed this day of _	, 2017.		
Meng Yang			
ACKNOWLEDGEMENT			
State of New Jersey	)		
County of Union	) ) s.s.: )		
	,	everyally appeared before the Maria Veryal	
known by me to be the same		ersonally appeared before me Meng Yang to be executed the foregoing instrument, and ack the purpose set forth.	
(Seal)			
		Notary Public	_
		Notary Public	
Executed this day of	, 2017.		
John S. Debenham			
ACKNOWLEDGEMENT			
State of New Jersey	1		
	) s.s.:		
County of Union	)		
known, and known by me to	be the same person described	ersonally appeared before me John S. Debed in and who executed the foregoing instrumer) own free will for the purpose set forth.	
(Seal)			
		Notary Public	-

#### WORLDWIDE ASSIGNMENT

#### WHEREAS, I/WE,

- (1) Dong-Ming Shen, located at Edison, NJ,
- (2) Rongze Kuang, located at Green Brook, NJ,
- (3) Puneet Kumar, located at Edison, NJ,
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- (5) Cheng Zhu, located at Edison, NJ,
- (6) Amjad Ali, located at Freehold, NJ,
- (7) Meng Yang, located at Edison, NJ,
- (8) John S. Debenham, located at Scotch Plains, 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:

#### **FACTOR XIa INHIBITORS**

and/or in the following application(s):

U.S. Provisional Application No. 62/377	7,969 filed on 08/22/2016;	
U.S. Application No.	having a filing date of	; and
PCT International Application No.	having a filing o	late of

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.

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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.

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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.

Executed this day of	; 2017.
Dong-Ming Shen	
ACKNOWLEDGEMENT	
State of New Jersey	) ) s.s.:
County of Union	)
and known by me to be the same perso	, 2017, personally appeared before me <b>Dong-Ming Shen</b> to me know on described in and who executed the foregoing instrument, and acknowledged (her) own free will for the purpose set forth.
(Seal)	
	Notary Public
	•••
•	
Executed this day of	, 2017.
Rongze Kuang	<del></del>
ACKNOWLEDGEMENT	
State of New Jersey	
County of Union	) s.s.: )
and known by me to be the same perso	, 2017, personally appeared before me Rongze Kuang to me known, on described in and who executed the foregoing instrument, and acknowledged (her) own free will for the purpose set forth.
(Seal)	
	Notary Public
•	•

Executed this 4th day of August, 2017.
almeet.
Puñeet Kumar
ACKNOWLEDGEMENT
State of New Jersey Maryland )  State of New Jersey Maryland )  S.S.:  County of Union Baltimere )
On this
Joseph L. Duffy
ousepit L. Duity
ACKNOWLEDGEMENT
State of New Jersey ) ) s.s.:
County of Union )
On this day of, 2017, personally appeared before me Joseph L. Duffy to me known and known by me to be the same person described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.
(Seal)
Notary Public

Executed this day of,	2017.
Cheng Zhu	-
ACKNOWLEDGEMENT	
State of New Jersey )	
) s.s County of Union )	ó
On this day of known by me to be the same person described he (she) executed the same, of his (her) own fr	, 2017, personally appeared before me Cheng Zhu to me known, and in and who executed the foregoing instrument, and acknowledged that see will for the purpose set forth.
(Seal)	
	Notary Public
Executed this day of,	2017.
Amjad Ali	
ACKNOWLEDGEMENT	
State of New Jersey ) s.s	
County of Union )	<del></del>
On this day of known by me to be the same person described he (she) executed the same, of his (her) own fr	_, 2017, personally appeared before me Amjad Ali to me known, and in and who executed the foregoing instrument, and acknowledged that ee will for the purpose set forth.
(Seal)	
	Notary Public

Executed this day of	, 2017.
Meng Yang	
ACKNOWLEDGEMENT	
State of New Jersey	)
County of Union	) s.s.: )
known by me to be the same persor	, 2017, personally appeared before me <b>Meng Yang</b> to me known, and n described in and who executed the foregoing instrument, and acknowledged that (her) own free will for the purpose set forth.
(Seal)	
·	Notary Public
Executed this day of	, 2017.
John S. Debenham	
ACKNOWLEDGEMENT	
State of New Jersey	)
County of Union	) s.s.: )
known, and known by me to be the	, 2017, personally appeared before me <b>John S. Debenham</b> to me same person described in and who executed the foregoing instrument, and ed the same, of his (her) own free will for the purpose set forth.
(Seal)	
	Notary Public

Page 5 of 5

**RECORDED: 08/21/2017** 

Computer Generated Template "Assignment-Merck Sharp & Dohme. Multiple Assignees Worldwide" (Assignment) Merck Sharp & Dohme Corp. 07/09/2010

PATENT REEL: 043341 FRAME: 0340