505369984 03/12/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5416776

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
TODD BOSANAC	10/30/2018
JOERG BENTZIEN	11/02/2018
MICHAEL JASON BURKE	10/30/2018
DARREN TODD DISALVO	11/06/2018
WANG MAO	11/06/2018
FARIBA SOLEYMANZADEH	03/05/2019
JOHN A. WESTBROOK	10/30/2018
ZHAOMING XIONG	10/26/2018

RECEIVING PARTY DATA

Name:	BOEHRINGER INGELHEIM INTERNATIONAL GMBH
Street Address:	BINGER STRASSE 173
City:	INGELHEIM AM RHEIN
State/Country:	GERMANY
Postal Code:	55216

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16069046

CORRESPONDENCE DATA

Fax Number:

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: 203 448-1844

Email: leslie.moscatello@boehringer-ingelheim.com

Correspondent Name: BOEHRINGER INGELHEIM USA CORPORATION

Address Line 1: 900 RIDGEBURY ROAD

Address Line 2: P.O. BOX 368

Address Line 4: RIDGEFIELD, CONNECTICUT 06877-0368

ATTORNEY DOCKET NUMBER: 09-0651-US-2

NAME OF SUBMITTER: ATABAK R. ROYAEE

SIGNATURE: /Atabak R. Royaee/

PAIENI

DATE SIGNED:	03/12/2019		
Total Attachments: 16			
source=09-0651-US-2-WWA-Bosanac-signed#page1.tif			
source=09-0651-US-2-WWA-Bosanac-signed#page2.tif			
source=09-0651-US-2-WWA-Bentzien_Signed#page1.tif			
source=09-0651-US-2-WWA-Bentzien_Signed#page2.tif			
source=09-0651-US-2-WWA-Burke-signed#page1.tif			
source=09-0651-US-2-WWA-Burke-signed#page2.tif			
source=09-0651-US-2-WWA-DiSalvo-executed#page1.tif			
source=09-0651-US-2-WWA-DiSalvo-executed#page2.tif			
source=09-0651-US-2-WWA-Mao-signed#page1.tif			
source=09-0651-US-2-WWA-Mao-signed#page2.tif			
source=09-0651-US-2-WWA-Soleymanzadeh-executed#page1.tif			
source=09-0651-US-2-WWA-Soleymanzadeh-executed#page2.tif			
source=09-0651-US-2-WWA-Westbrook-signed#page1.tif			
source=09-0651-US-2-WWA-Westbrook-signed#page2.tif			
source=09-0651-US-2-WWA-Xiong-executed#page1.tif			
source=09-0651-US-2-WWA-Xiong-exe	source=09-0651-US-2-WWA-Xiong-executed#page2.tif		

CONFIRMATION OF ASSIGNMENT / ASSIGNMENT – WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby

acknowledged, and further pursuant to the agreement signed at the start of my employment with

Boehringer Ingelheim Pharmaceuticals, Inc., and intercompany agreements, the undersigned inventor

has previously transferred, sold, and assigned, and to the extent the inventor has not previously

transferred, sold, and assigned hereby transfers, sells, and assigns, unto

BOEHRINGER INGELHEIM INTERNATIONAL GMbH

Binger Strasse 173

Ingelheim am Rhein 55216

Federal Republic of Germany

its successors and assigns, (hereinafter "Assignee") his/her entire right, title, and interest, for the

United States and the Territories and Possessions thereof and all foreign countries and regions, in and

to the inventions (hereinafter referred to as the "Inventions") as set forth and described in the

following United States patent application(s): Application No. 16/069,046; filed July 10, 2018,

(hereinafter referred to as the "Application"), including all rights to provisionals, nonprovisionals,

divisionals, continuations, continuations-in-part, Patent Cooperation Treaty (PCT) applications, and

national stages of any such PCT applications, and all other foreign patent applications based in whole

or in part upon the inventions or upon the Application, and any and all Letters Patent and reissues,

reexaminations, and extensions of Letters Patent granted in any country for the Inventions or upon

the Application or any patent application claiming priority rights from the Application, and every

priority right that is or may be predicated upon or arise from the Inventions, or from the Application,

and including all rights to sue for any infringement of the Letters Patent, and further including all rights

to past damages relating to third party infringement of the Letters Patent, the Assignee being hereby

authorized to file and prosecute patent applications, including completing formalities and recordation

of ownership claims, in any or all countries and regions on any or all of the Inventions in the name of

the undersigned or in the name of the Assignee or otherwise as the Assignee may deem advisable,

under the PCT or otherwise; the United States Patent and Trademark Office and corresponding patent

granting authorities outside the United States being hereby authorized to issue or transfer all the

Letters Patent issuing from any patent applications claiming the Inventions or claiming priority from

the Application to the Assignee in accordance herewith; this assignment being under covenant, not

only that full power to make the same is had by the undersigned, but also that such assigned right is

Page 1 of 2

U.S. Serial No. 16/069,046

Date of Filing: July 10, 2018

Attorney Docket No. 09-0651-US-2

not encumbered by any grant, license, or other right heretofore given, and that the undersigned will

do all acts reasonably serving to ensure that the Inventions, the Application, and any Letters Patent

which may issue from any patent applications claiming the inventions or claiming priority from the

Application shall be held and enjoyed by the Assignee as fully and entirely as the same could have

been held and enjoyed by the undersigned if this assignment had not been made, and particularly to

execute and deliver to the Assignee all lawful documents including petitions, specifications, oaths,

assignments, invention disclaimers, declarations, and lawful affidavits in form and substance which

may be requested by the Assignee, to furnish the Assignee with all facts relating to the inventions

and/or the Application or the history thereof and any and all documents, photographs, models,

samples or other physical exhibits which may embody the Inventions or relate to the Application, and

generally do everything possible to aid the Assignee, its successors, legal representatives, and assigns,

to obtain and enforce proper patent protection, in all countries and regions, for the inventions, the

Application, and/or Letters Patent that may issue as a result of the Application and from any patent

applications claiming priority to the Application, and not to take any action challenging or opposing,

on any grounds whatsoever, Assignee's rights granted under this Agreement, or the validity of the

transfer of the ownership rights hereunder. For the avoidance of doubt, nothing in this assignment

requires the Assignor to provide testimony in a United States litigation related to the above mentioned

Inventions, Application, and/or Letters Patent.

The undersigned hereby grant(s) an authorized representative of Assignee the power to insert

in this Assignment any further identification that may be necessary or desirable to comply with the

rules of the U.S. Patent and Trademark Office and/or corresponding patent granting authorities

outside the United States, and to handle all correspondence relating to the Application or any patent

applications claiming priority from the Application.

NAME AND SIGNATURE OF INVENTOR

Name:

Todd BOSANAC

Signature: Volume

Page 2 of 2

U.S. Serial No. 16/069,046

Date of Filing: July 10, 2018

Attorney Docket No. 09-0651-US-2

CONFIRMATION OF ASSIGNMENT / ASSIGNMENT - WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby

acknowledged, and further pursuant to the agreement signed at the start of my employment with

Boehringer Ingelheim Pharmaceuticals, Inc., and intercompany agreements, the undersigned inventor

has previously transferred, sold, and assigned, and to the extent the inventor has not previously

transferred, sold, and assigned hereby transfers, sells, and assigns, unto

BOEHRINGER INGELHEIM INTERNATIONAL GMbH

Binger Strasse 173

Ingelheim am Rhein 55216

Federal Republic of Germany

its successors and assigns, (hereinafter "Assignee") his/her entire right, title, and interest, for the

United States and the Territories and Possessions thereof and all foreign countries and regions, in and

to the inventions (hereinafter referred to as the "Inventions") as set forth and described in the

following United States patent application(s): Application No. 16/069,046; filed July 10, 2018,

(hereinafter referred to as the "Application"), including all rights to provisionals, nonprovisionals,

divisionals, continuations, continuations-in-part, Patent Cooperation Treaty (PCT) applications, and

national stages of any such PCT applications, and all other foreign patent applications based in whole

or in part upon the Inventions or upon the Application, and any and all Letters Patent and reissues,

reexaminations, and extensions of Letters Patent granted in any country for the Inventions or upon

the Application or any patent application claiming priority rights from the Application, and every

priority right that is or may be predicated upon or arise from the Inventions, or from the Application,

and including all rights to sue for any infringement of the Letters Patent, and further including all rights

to past damages relating to third party infringement of the Letters Patent, the Assignee being hereby

authorized to file and prosecute patent applications, including completing formalities and recordation

of ownership claims, in any or all countries and regions on any or all of the Inventions in the name of

the undersigned or in the name of the Assignee or otherwise as the Assignee may deem advisable,

under the PCT or otherwise; the United States Patent and Trademark Office and corresponding patent

granting authorities outside the United States being hereby authorized to issue or transfer all the

Letters Patent issuing from any patent applications claiming the Inventions or claiming priority from

the Application to the Assignee in accordance herewith; this assignment being under covenant, not

only that full power to make the same is had by the undersigned, but also that such assigned right is

Page 1 of 2

U.S. Serial No. 16/069,046

Date of Filing: July 10, 2018

Attorney Docket No. 09-0651-US-2

not encumbered by any grant, license, or other right heretofore given, and that the undersigned will

do all acts reasonably serving to ensure that the Inventions, the Application, and any Letters Patent

which may issue from any patent applications claiming the Inventions or claiming priority from the

Application shall be held and enjoyed by the Assignee as fully and entirely as the same could have

been held and enjoyed by the undersigned if this assignment had not been made, and particularly to

execute and deliver to the Assignee all lawful documents including petitions, specifications, oaths,

assignments, invention disclaimers, declarations, and lawful affidavits in form and substance which

may be requested by the Assignee, to furnish the Assignee with all facts relating to the Inventions

and/or the Application or the history thereof and any and all documents, photographs, models,

samples or other physical exhibits which may embody the Inventions or relate to the Application, and

generally do everything possible to aid the Assignee, its successors, legal representatives, and assigns,

to obtain and enforce proper patent protection, in all countries and regions, for the inventions, the

Application, and/or Letters Patent that may issue as a result of the Application and from any patent

applications claiming priority to the Application, and not to take any action challenging or opposing,

on any grounds whatsoever, Assignee's rights granted under this Agreement, or the validity of the

transfer of the ownership rights hereunder. For the avoidance of doubt, nothing in this assignment

requires the Assignor to provide testimony in a United States litigation related to the above mentioned

Inventions, Application, and/or Letters Patent.

The undersigned hereby grant(s) an authorized representative of Assignee the power to insert

in this Assignment any further identification that may be necessary or desirable to comply with the

rules of the U.S. Patent and Trademark Office and/or corresponding patent granting authorities

outside the United States, and to handle all correspondence relating to the Application or any patent

applications claiming priority from the Application.

NAME AND SIGNATURE OF INVENTOR

Name:

Joerg BENTZIEN

Signature:

_Date:___//2/20/8⁵

Page 2 of 2

CONFIRMATION OF ASSIGNMENT / ASSIGNMENT - WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and further pursuant to the agreement signed at the start of my employment with Boehringer Ingelheim Pharmaceuticals, Inc., and intercompany agreements, the undersigned inventor has previously transferred, sold, and assigned, and to the extent the inventor has not previously transferred, sold, and assigned hereby transfers, sells, and assigns, unto

> **BOEHRINGER INGELHEIM INTERNATIONAL GmbH** Binger Strasse 173 Ingelheim am Rhein 55216 Federal Republic of Germany

its successors and assigns, (hereinafter "Assignee") his/her entire right, title, and interest, for the United States and the Territories and Possessions thereof and all foreign countries and regions, in and to the inventions (hereinafter referred to as the "Inventions") as set forth and described in the following United States patent application(s): Application No. 16/069,046; filed July 10, 2018, (hereinafter referred to as the "Application"), including all rights to provisionals, nonprovisionals, divisionals, continuations, continuations-in-part, Patent Cooperation Treaty (PCT) applications, and national stages of any such PCT applications, and all other foreign patent applications based in whole or in part upon the Inventions or upon the Application, and any and all Letters Patent and reissues, reexaminations, and extensions of Letters Patent granted in any country for the Inventions or upon the Application or any patent application claiming priority rights from the Application, and every priority right that is or may be predicated upon or arise from the Inventions, or from the Application, and including all rights to sue for any infringement of the Letters Patent, and further including all rights to past damages relating to third party infringement of the Letters Patent, the Assignee being hereby authorized to file and prosecute patent applications, including completing formalities and recordation of ownership claims, in any or all countries and regions on any or all of the inventions in the name of the undersigned or in the name of the Assignee or otherwise as the Assignee may deem advisable, under the PCT or otherwise; the United States Patent and Trademark Office and corresponding patent granting authorities outside the United States being hereby authorized to issue or transfer all the Letters Patent issuing from any patent applications claiming the inventions or claiming priority from the Application to the Assignee in accordance herewith; this assignment being under covenant, not only that full power to make the same is had by the undersigned, but also that such assigned right is

U.S. Serial No. 16/069,046

Date of Filling: July 10, 2018

Attorney Docket No. 09-0651-US-2

not encumbered by any grant, license, or other right heretofore given, and that the undersigned will

do all acts reasonably serving to ensure that the inventions, the Application, and any Letters Patent

which may issue from any patent applications claiming the Inventions or claiming priority from the

Application shall be held and enjoyed by the Assignee as fully and entirely as the same could have

been held and enjoyed by the undersigned if this assignment had not been made, and particularly to

execute and deliver to the Assignee all lawful documents including petitions, specifications, oaths,

assignments, invention disclaimers, declarations, and lawful affidavits in form and substance which

may be requested by the Assignee, to furnish the Assignee with all facts relating to the Inventions

and/or the Application or the history thereof and any and all documents, photographs, models,

samples or other physical exhibits which may embody the Inventions or relate to the Application, and

generally do everything possible to aid the Assignee, its successors, legal representatives, and assigns,

to obtain and enforce proper patent protection, in all countries and regions, for the Inventions, the

Application, and/or Letters Patent that may issue as a result of the Application and from any patent

applications claiming priority to the Application, and not to take any action challenging or opposing,

on any grounds whatsoever, Assignee's rights granted under this Agreement, or the validity of the

transfer of the ownership rights hereunder. For the avoidance of doubt, nothing in this assignment

requires the Assignor to provide testimony in a United States litigation related to the above mentioned

Inventions, Application, and/or Letters Patent.

The undersigned hereby grant(s) an authorized representative of Assignee the power to insert

in this Assignment any further identification that may be necessary or desirable to comply with the

rules of the U.S. Patent and Trademark Office and/or corresponding patent granting authorities

outside the United States, and to handle all correspondence relating to the Application or any patent

applications claiming priority from the Application.

NAME AND SIGNATURE OF INVENTOR

Name:

Michael Jason BURKE

Date: 10 30 2018

Page 2 of 2

PATENT

U.S. Serial No. 15/069,046

Date of Filing: July 10, 2018

Attorney Docket No. 09-0651-US-2

CONFIRMATION OF ASSIGNMENT / ASSIGNMENT - WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby

acknowledged, and further pursuant to the agreement signed at the start of my employment with

Boehringer Ingelheim Pharmaceuticals, Inc., and intercompany agreements, the undersigned inventor

has previously transferred, sold, and assigned, and to the extent the inventor has not previously

transferred, sold, and assigned hereby transfers, sells, and assigns, unto

BOEHRINGER INGELHEIM INTERNATIONAL GmbH

Binger Strasse 173

Ingelheim am Rhein 55216

Federal Republic of Germany

its successors and assigns, (hereinafter "Assignee") his/her entire right, title, and interest, for the

United States and the Territories and Possessions thereof and all foreign countries and regions, in and

to the inventions (hereinafter referred to as the "Inventions") as set forth and described in the

following United States patent application(s): Application No. 16/069,046; filed July 10, 2018,

(hereinafter referred to as the "Application"), including all rights to provisionals, nonprovisionals,

divisionals, continuations, continuations-in-part, Patent Cooperation Treaty (PCT) applications, and

national stages of any such PCT applications, and all other foreign patent applications based in whole

or in part upon the inventions or upon the Application, and any and all Letters Patent and reissues, reexaminations, and extensions of Letters Patent granted in any country for the Inventions or upon

the Application or any patent application claiming priority rights from the Application, and every

priority right that is or may be predicated upon or arise from the Inventions, or from the Application,

and including all rights to sue for any infringement of the Letters Patent, and further including all rights

to past damages relating to third party infringement of the Letters Patent, the Assignee being hereby

authorized to file and prosecute patent applications, including completing formalities and recordation

of ownership claims, in any or all countries and regions on any or all of the inventions in the name of

the undersigned or in the name of the Assignee or otherwise as the Assignee may deem advisable,

under the PCT or otherwise; the United States Patent and Trademark Office and corresponding patent

granting authorities outside the United States being hereby authorized to issue or transfer all the

Letters Patent issuing from any patent applications claiming the Inventions or claiming priority from

the Application to the Assignee in accordance herewith; this assignment being under covenant, not

only that full power to make the same is had by the undersigned, but also that such assigned right is

Page 1 of 2

U.S. Serial No. 16/069,046

Date of Filing: July 10, 2018

Attorney Docket No. 09-0651-US-2

not encumbered by any grant, license, or other right heretofore given, and that the undersigned will

do all acts reasonably serving to ensure that the Inventions, the Application, and any Letters Patent

which may issue from any patent applications claiming the Inventions or claiming priority from the

Application shall be held and enjoyed by the Assignee as fully and entirely as the same could have

been held and enjoyed by the undersigned if this assignment had not been made, and particularly to

execute and deliver to the Assignee all lawful documents including petitions, specifications, oaths,

assignments, invention disclaimers, declarations, and lawful affidavits in form and substance which

may be requested by the Assignee, to furnish the Assignee with all facts relating to the Inventions

and/or the Application or the history thereof and any and all documents, photographs, models,

samples or other physical exhibits which may embody the Inventions or relate to the Application, and

generally do everything possible to aid the Assignee, its successors, legal representatives, and assigns,

to obtain and enforce proper patent protection, in all countries and regions, for the Inventions, the

Application, and/or Letters Patent that may issue as a result of the Application and from any patent

applications claiming priority to the Application, and not to take any action challenging or opposing,

on any grounds whatsoever, Assignee's rights granted under this Agreement, or the validity of the

transfer of the ownership rights hereunder. For the avoidance of doubt, nothing in this assignment

requires the Assignor to provide testimony in a United States litigation related to the above mentioned

inventions, Application, and/or Letters Patent.

The undersigned hereby grant(s) an authorized representative of Assignee the power to insert

in this Assignment any further identification that may be necessary or desirable to comply with the

rules of the U.S. Patent and Trademark Office and/or corresponding patent granting authorities

outside the United States, and to handle all correspondence relating to the Application or any patent

applications claiming priority from the Application.

NAME AND SIGNATURE OF INVENTOR

Name:

Darren Todd DISALVO

Signature

Page 2 of 2

CONFIRMATION OF ASSIGNMENT / ASSIGNMENT – WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and further pursuant to the agreement signed at the start of my employment with Boehringer Ingelheim Pharmaceuticals, Inc., and intercompany agreements, the undersigned inventor has previously transferred, sold, and assigned, and to the extent the inventor has not previously transferred, sold, and assigned hereby transfers, sells, and assigns, unto

BOEHRINGER INGELHEIM INTERNATIONAL GmbH
Binger Strasse 173
Ingelheim am Rhein 55216
Federal Republic of Germany

its successors and assigns, (hereinafter "Assignee") his/her entire right, title, and interest, for the United States and the Territories and Possessions thereof and all foreign countries and regions, in and to the inventions (hereinafter referred to as the "Inventions") as set forth and described in the following United States patent application(s): Application No. 16/069,046; filed July 10, 2018, (hereinafter referred to as the "Application"), including all rights to provisionals, nonprovisionals, divisionals, continuations, continuations-in-part, Patent Cooperation Treaty (PCT) applications, and national stages of any such PCT applications, and all other foreign patent applications based in whole or in part upon the Inventions or upon the Application, and any and all Letters Patent and reissues, reexaminations, and extensions of Letters Patent granted in any country for the Inventions or upon the Application or any patent application claiming priority rights from the Application, and every priority right that is or may be predicated upon or arise from the Inventions, or from the Application, and including all rights to sue for any infringement of the Letters Patent, and further including all rights to past damages relating to third party infringement of the Letters Patent, the Assignee being hereby authorized to file and prosecute patent applications, including completing formalities and recordation of ownership claims, in any or all countries and regions on any or all of the Inventions in the name of the undersigned or in the name of the Assignee or otherwise as the Assignee may deem advisable, under the PCT or otherwise; the United States Patent and Trademark Office and corresponding patent granting authorities outside the United States being hereby authorized to issue or transfer all the Letters Patent issuing from any patent applications claiming the Inventions or claiming priority from the Application to the Assignee in accordance herewith; this assignment being under covenant, not only that full power to make the same is had by the undersigned, but also that such assigned right is

U.S. Serial No. 16/069,046

Date of Filing: July 10, 2018

Attorney Docket No. 09-0651-US-2

not encumbered by any grant, license, or other right heretofore given, and that the undersigned will

do all acts reasonably serving to ensure that the Inventions, the Application, and any Letters Patent

which may issue from any patent applications claiming the Inventions or claiming priority from the

Application shall be held and enjoyed by the Assignee as fully and entirely as the same could have

been held and enjoyed by the undersigned if this assignment had not been made, and particularly to

execute and deliver to the Assignee all lawful documents including petitions, specifications, oaths,

assignments, invention disclaimers, declarations, and lawful affidavits in form and substance which

may be requested by the Assignee, to furnish the Assignee with all facts relating to the inventions

and/or the Application or the history thereof and any and all documents, photographs, models,

samples or other physical exhibits which may embody the Inventions or relate to the Application, and

generally do everything possible to aid the Assignee, its successors, legal representatives, and assigns,

to obtain and enforce proper patent protection, in all countries and regions, for the inventions, the

Application, and/or Letters Patent that may issue as a result of the Application and from any patent

applications claiming priority to the Application, and not to take any action challenging or opposing,

on any grounds whatsoever, Assignee's rights granted under this Agreement, or the validity of the

transfer of the ownership rights hereunder. For the avoidance of doubt, nothing in this assignment

requires the Assignor to provide testimony in a United States litigation related to the above mentioned

Inventions, Application, and/or Letters Patent.

The undersigned hereby grant(s) an authorized representative of Assignee the power to insert

in this Assignment any further identification that may be necessary or desirable to comply with the

rules of the U.S. Patent and Trademark Office and/or corresponding patent granting authorities

outside the United States, and to handle all correspondence relating to the Application or any patent

applications claiming priority from the Application.

NAME AND SIGNATURE OF INVENTOR

Name:

Wang MAO

Signature:

(Date: 11/06/2018

Page 2 of 2

PATENT

U.S. Serial No. 16/069,046

Date of Filing: July 10, 2018

CONFIRMATION OF ASSIGNMENT / ASSIGNMENT - WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby

acknowledged, and further pursuant to the agreement signed at the start of my employment with

Boehringer Ingelheim Pharmaceuticals, Inc., and intercompany agreements, the undersigned inventor

has previously transferred, sold, and assigned, and to the extent the inventor has not previously

transferred, sold, and assigned hereby transfers, sells, and assigns, unto

BOEHRINGER INGELHEIM INTERNATIONAL GMbH

Binger Strasse 173

Ingelheim am Rhein 55216

Federal Republic of Germany

its successors and assigns, (hereinafter "Assignee") his/her entire right, title, and interest, for the

United States and the Territories and Possessions thereof and all foreign countries and regions, in and

to the inventions (hereinafter referred to as the "Inventions") as set forth and described in the

following United States patent application(s): Application No. 16/069,046; filed July 10, 2018,

(hereinafter referred to as the "Application"), including all rights to provisionals, nonprovisionals,

divisionals, continuations, continuations-in-part, Patent Cooperation Treaty (PCT) applications, and

national stages of any such PCT applications, and all other foreign patent applications based in whole

or in part upon the Inventions or upon the Application, and any and all Letters Patent and reissues,

reexaminations, and extensions of Letters Patent granted in any country for the Inventions or upon

the Application or any patent application claiming priority rights from the Application, and every

priority right that is or may be predicated upon or arise from the Inventions, or from the Application,

and including all rights to sue for any infringement of the Letters Patent, and further including all rights

to past damages relating to third party infringement of the Letters Patent, the Assignee being hereby

authorized to file and prosecute patent applications, including completing formalities and recordation

of ownership claims, in any or all countries and regions on any or all of the Inventions in the name of

the undersigned or in the name of the Assignee or otherwise as the Assignee may deem advisable,

under the PCT or otherwise; the United States Patent and Trademark Office and corresponding patent

granting authorities outside the United States being hereby authorized to issue or transfer all the

Letters Patent issuing from any patent applications claiming the Inventions or claiming priority from

the Application to the Assignee in accordance herewith; this assignment being under covenant, not

only that full power to make the same is had by the undersigned, but also that such assigned right is

Page 1 of 2

U.S. Serial No. 16/069,046

Date of Filing: July 10, 2018

Attorney Docket No. 09-0651-US-2

not encumbered by any grant, license, or other right heretofore given, and that the undersigned will

do all acts reasonably serving to ensure that the Inventions, the Application, and any Letters Patent

which may issue from any patent applications claiming the Inventions or claiming priority from the

Application shall be held and enjoyed by the Assignee as fully and entirely as the same could have

been held and enjoyed by the undersigned if this assignment had not been made, and particularly to

execute and deliver to the Assignee all lawful documents including petitions, specifications, oaths,

assignments, invention disclaimers, declarations, and lawful affidavits in form and substance which

may be requested by the Assignee, to furnish the Assignee with all facts relating to the inventions

and/or the Application or the history thereof and any and all documents, photographs, models,

samples or other physical exhibits which may embody the Inventions or relate to the Application, and

generally do everything possible to aid the Assignee, its successors, legal representatives, and assigns,

to obtain and enforce proper patent protection, in all countries and regions, for the Inventions, the

Application, and/or Letters Patent that may issue as a result of the Application and from any patent

applications claiming priority to the Application, and not to take any action challenging or opposing,

on any grounds whatsoever, Assignee's rights granted under this Agreement, or the validity of the

transfer of the ownership rights hereunder. For the avoidance of doubt, nothing in this assignment

requires the Assignor to provide testimony in a United States litigation related to the above mentioned

Inventions, Application, and/or Letters Patent.

The undersigned hereby grant(s) an authorized representative of Assignee the power to insert

in this Assignment any further identification that may be necessary or desirable to comply with the

rules of the U.S. Patent and Trademark Office and/or corresponding patent granting authorities

outside the United States, and to handle all correspondence relating to the Application or any patent

applications claiming priority from the Application.

NAME AND SIGNATURE OF INVENTOR

Name:

Fariba SOLEYMANZADEH

Signature:

Date: <u>3/5/20/9</u>

Page 2 of 2

CONFIRMATION OF ASSIGNMENT / ASSIGNMENT – WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby

acknowledged, and further pursuant to the agreement signed at the start of my employment with

Boehringer Ingelheim Pharmaceuticals, Inc., and intercompany agreements, the undersigned inventor

has previously transferred, sold, and assigned, and to the extent the inventor has not previously

transferred, sold, and assigned hereby transfers, sells, and assigns, unto

BOEHRINGER INGELHEIM INTERNATIONAL GmbH

Binger Strasse 173

Ingelheim am Rhein 55216

Federal Republic of Germany

its successors and assigns, (hereinafter "Assignee") his/her entire right, title, and interest, for the

United States and the Territories and Possessions thereof and all foreign countries and regions, in and

to the inventions (hereinafter referred to as the "Inventions") as set forth and described in the

following United States patent application(s): Application No. 16/069,046; filed July 10, 2018,

(hereinafter referred to as the "Application"), including all rights to provisionals, nonprovisionals,

divisionals, continuations, continuations-in-part, Patent Cooperation Treaty (PCT) applications, and

national stages of any such PCT applications, and all other foreign patent applications based in whole

or in part upon the Inventions or upon the Application, and any and all Letters Patent and reissues,

reexaminations, and extensions of Letters Patent granted in any country for the Inventions or upon

the Application or any patent application claiming priority rights from the Application, and every

priority right that is or may be predicated upon or arise from the Inventions, or from the Application,

and including all rights to sue for any infringement of the Letters Patent, and further including all rights

to past damages relating to third party infringement of the Letters Patent, the Assignee being hereby

authorized to file and prosecute patent applications, including completing formalities and recordation

of ownership claims, in any or all countries and regions on any or all of the Inventions in the name of

the undersigned or in the name of the Assignee or otherwise as the Assignee may deem advisable,

under the PCT or otherwise; the United States Patent and Trademark Office and corresponding patent

granting authorities outside the United States being hereby authorized to issue or transfer all the

Letters Patent issuing from any patent applications claiming the Inventions or claiming priority from

the Application to the Assignee in accordance herewith; this assignment being under covenant, not

only that full power to make the same is had by the undersigned, but also that such assigned right is

Page 1 of 2

U.S. Serial No. 16/069,046

Date of Filing: July 10, 2018

Attorney Docket No. 09-0651-US-2

not encumbered by any grant, license, or other right heretofore given, and that the undersigned will

do all acts reasonably serving to ensure that the Inventions, the Application, and any Letters Patent

which may issue from any patent applications claiming the Inventions or claiming priority from the

Application shall be held and enjoyed by the Assignee as fully and entirely as the same could have

been held and enjoyed by the undersigned if this assignment had not been made, and particularly to

execute and deliver to the Assignee all lawful documents including petitions, specifications, oaths,

assignments, invention disclaimers, declarations, and lawful affidavits in form and substance which

may be requested by the Assignee, to furnish the Assignee with all facts relating to the inventions

and/or the Application or the history thereof and any and all documents, photographs, models,

samples or other physical exhibits which may embody the Inventions or relate to the Application, and

generally do everything possible to aid the Assignee, its successors, legal representatives, and assigns,

to obtain and enforce proper patent protection, in all countries and regions, for the inventions, the

Application, and/or Letters Patent that may issue as a result of the Application and from any patent

applications claiming priority to the Application, and not to take any action challenging or opposing,

on any grounds whatsoever, Assignee's rights granted under this Agreement, or the validity of the

transfer of the ownership rights hereunder. For the avoidance of doubt, nothing in this assignment

requires the Assignor to provide testimony in a United States litigation related to the above mentioned

Inventions, Application, and/or Letters Patent.

The undersigned hereby grant(s) an authorized representative of Assignee the power to insert

in this Assignment any further identification that may be necessary or desirable to comply with the

rules of the U.S. Patent and Trademark Office and/or corresponding patent granting authorities

outside the United States, and to handle all correspondence relating to the Application or any patent

applications claiming priority from the Application.

NAME AND SIGNATURE OF INVENTOR

Name:

John A. WESTBROOK

Signature:

Page 2 of 2

Attorney Docket No. 09-0651-US-2

CONFIRMATION OF ASSIGNMENT / ASSIGNMENT - WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and further pursuant to the agreement signed at the start of my employment with Boehringer Ingelheim Pharmaceuticals, Inc., and intercompany agreements, the undersigned inventor has previously transferred, sold, and assigned, and to the extent the inventor has not previously transferred, sold, and assigned hereby transfers, sells, and assigns, unto

> **BOEHRINGER INGELHEIM INTERNATIONAL GmbH** Binger Strasse 173 Ingelheim am Rhein 55216 Federal Republic of Germany

its successors and assigns, (hereinafter "Assignee") his/her entire right, title, and interest, for the United States and the Territories and Possessions thereof and all foreign countries and regions, in and to the inventions (hereinafter referred to as the "Inventions") as set forth and described in the following United States patent application(s): Application No. 16/069,046; filed July 10, 2018, (hereinafter referred to as the "Application"), including all rights to provisionals, nonprovisionals, divisionals, continuations, continuations-in-part, Patent Cooperation Treaty (PCT) applications, and national stages of any such PCT applications, and all other foreign patent applications based in whole or in part upon the Inventions or upon the Application, and any and all Letters Patent and reissues, reexaminations, and extensions of Letters Patent granted in any country for the Inventions or upon the Application or any patent application claiming priority rights from the Application, and every priority right that is or may be predicated upon or arise from the Inventions, or from the Application, and including all rights to sue for any infringement of the Letters Patent, and further including all rights to past damages relating to third party infringement of the Letters Patent, the Assignee being hereby authorized to file and prosecute patent applications, including completing formalities and recordation of ownership claims, in any or all countries and regions on any or all of the inventions in the name of the undersigned or in the name of the Assignee or otherwise as the Assignee may deem advisable, under the PCT or otherwise; the United States Patent and Trademark Office and corresponding patent granting authorities outside the United States being hereby authorized to issue or transfer all the Letters Patent issuing from any patent applications claiming the Inventions or claiming priority from the Application to the Assignee in accordance herewith; this assignment being under covenant, not only that full power to make the same is had by the undersigned, but also that such assigned right is

U.S. Serial No. 16/069,046

Date of Filing: July 10, 2018

Attorney Docket No. 09-0651-US-2

not encumbered by any grant, license, or other right heretofore given, and that the undersigned will

do all acts reasonably serving to ensure that the Inventions, the Application, and any Letters Patent

which may issue from any patent applications claiming the inventions or claiming priority from the

Application shall be held and enjoyed by the Assignee as fully and entirely as the same could have

been held and enjoyed by the undersigned if this assignment had not been made, and particularly to

execute and deliver to the Assignee all lawful documents including petitions, specifications, oaths,

assignments, invention disclaimers, declarations, and lawful affidavits in form and substance which

may be requested by the Assignee, to furnish the Assignee with all facts relating to the Inventions

and/or the Application or the history thereof and any and all documents, photographs, models,

samples or other physical exhibits which may embody the inventions or relate to the Application, and

generally do everything possible to aid the Assignee, its successors, legal representatives, and assigns,

to obtain and enforce proper patent protection, in all countries and regions, for the inventions, the

Application, and/or Letters Patent that may issue as a result of the Application and from any patent

applications claiming priority to the Application, and not to take any action challenging or opposing,

on any grounds whatsoever, Assignee's rights granted under this Agreement, or the validity of the

transfer of the ownership rights hereunder. For the avoidance of doubt, nothing in this assignment

requires the Assignor to provide testimony in a United States litigation related to the above mentioned

Inventions, Application, and/or Letters Patent:

The undersigned hereby grant(s) an authorized representative of Assignee the power to insert

in this Assignment any further identification that may be necessary or desirable to comply with the

rules of the U.S. Patent and Trademark Office and/or corresponding patent granting authorities

outside the United States, and to handle all correspondence relating to the Application or any patent

applications claiming priority from the Application.

NAME AND SIGNATURE OF INVENTOR

Zhaoming XIONG

Page 2 of 2

PATENT