

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4676544

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
JENNIFER BROGDON	09/22/2017
BORIS ENGELS	09/25/2017
BRIAN GRANDA	09/21/2017
LU HUANG	09/22/2017
MING LEI	09/23/2017
NA LI	09/25/2017
JIMIN ZHANG	09/21/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH, INC.
<b>Street Address:</b>	250 MASSACHUSETTS AVENUE
<b>City:</b>	CAMBRIDGE
<b>State/Country:</b>	MASSACHUSETTS
<b>Postal Code:</b>	02139
<b>PROPERTY NUMBERS Total: 3</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15727402
<b>Application Number:</b>	62405520
<b>PCT Number:</b>	US2017055627
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(617)395-7070
<i>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.</i>	
<b>Phone:</b>	(617) 395-7005
<b>Email:</b>	WZPatents@LALaw.com
<b>Correspondent Name:</b>	LANDO & ANASTASI, LLP
<b>Address Line 1:</b>	RIVERFRONT OFFICE PARK
<b>Address Line 2:</b>	ONE MAIN STREET, SUITE 1100
<b>Address Line 4:</b>	CAMBRIDGE, MASSACHUSETTS 02142
<b>ATTORNEY DOCKET NUMBER:</b>	N2067-712100/10/WO
<b>NAME OF SUBMITTER:</b>	WEI ZHANG

PATENT

<b>SIGNATURE:</b>	/Wei Zhang/
<b>DATE SIGNED:</b>	11/07/2017
<b>Total Attachments: 28</b> source=All Invs to NIBR#page1.tif source=All Invs to NIBR#page2.tif source=All Invs to NIBR#page3.tif source=All Invs to NIBR#page4.tif source=All Invs to NIBR#page5.tif source=All Invs to NIBR#page6.tif source=All Invs to NIBR#page7.tif source=All Invs to NIBR#page8.tif source=All Invs to NIBR#page9.tif source=All Invs to NIBR#page10.tif source=All Invs to NIBR#page11.tif source=All Invs to NIBR#page12.tif source=All Invs to NIBR#page13.tif source=All Invs to NIBR#page14.tif source=All Invs to NIBR#page15.tif source=All Invs to NIBR#page16.tif source=All Invs to NIBR#page17.tif source=All Invs to NIBR#page18.tif source=All Invs to NIBR#page19.tif source=All Invs to NIBR#page20.tif source=All Invs to NIBR#page21.tif source=All Invs to NIBR#page22.tif source=All Invs to NIBR#page23.tif source=All Invs to NIBR#page24.tif source=All Invs to NIBR#page25.tif source=All Invs to NIBR#page26.tif source=All Invs to NIBR#page27.tif source=All Invs to NIBR#page28.tif	

**ASSIGNMENT**

WHEREAS, I/we, **Jennifer Brogdon**, a citizen of the United States of America, having a mailing address of Novartis Institutes for BioMedical Research, Inc., 250 Massachusetts Avenue, Cambridge, MA 02139; hereinafter generally referred to as "ASSIGNOR," have invented a certain new and useful

**TREATMENT OF CANCER USING CHIMERIC ANTIGEN RECEPTORS**

filed in the United States Patent and Trademark Office on **October 7, 2016** and accorded Patent Application No.: **62/405,520**;

and filed as a PCT Application on October 6, 2017 and accorded International Application No.: PCT/US2017/055627 ;

and filed as a PCT Application on \_\_\_\_\_ and accorded International Application No.: \_\_\_\_\_;

and filed in the United States Patent and Trademark Office on October 6, 2017 and accorded Patent Application No.: 15/727402 ;

and filed in the United States Patent and Trademark Office on \_\_\_\_\_ and accorded Patent Application No.: \_\_\_\_\_;<sup>1</sup>

AND, WHEREAS, **Novartis Institutes for BioMedical Research, Inc.**, hereinafter referred to as the "ASSIGNEE", of 250 Massachusetts Avenue, Cambridge, MA 02139, a company organized by the laws of Delaware, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and to any patent application(s) corresponding thereto, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in exchange for valuable consideration from the receipt of which is hereby acknowledged and intending to be bound, I, the said assignor, have sold, assigned, transferred and set over, effective as of the execution date of this assignment and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title and interest in and to said inventions or improvements and said provisional application and any

<sup>1</sup> We appoint, authorize and request the attorneys appointed in said application to hereafter complete this assignment by inserting in the spaces provided above the filing date and serial number of said application(s) when known.

and all corresponding patent application(s) and continuations, divisions and renewals of and substitutes for said corresponding patent application(s), and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in my name corresponding patent applications for Letters Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me had this assignment, sale and transfer not been made.

AND I hereby covenant that I have full right to convey the entire interest herein assigned, and that I have not executed and will not execute any agreement in conflict herewith, and I further covenant and agree that I will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees or legal representatives, and I agree to communicate to said assignee, or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

AND I hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents of applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

IN WITNESS WHEREOF, I have hereunto set my hand and seal.

September 22, 2017  
Date

Jennifer Brogdon  
Jennifer Brogdon

Witnessed by:

Kendra Mar  
Name: Kendra Mar  
Address: c/o Charles St. South  
Boston, MA. 02116

Stephanie Pan  
Name: Stephanie Pan  
Address: 2 Beech Street, Cambridge MA  
02139

**Novartis Institutes for BioMedical Research Inc.**

Executed this 25<sup>th</sup> day of September, 2017.

BY Kathleen M. Drury  
Name: Kathleen M Drury  
Title: Authorized Signatory

Witnessed by:

[Signature]

Name:

Address:

Michaiah Copp  
700 Main Street  
Cambridge, MA 02139

Tara M. Melanson

Name:

Address:

Tara M. Melanson  
700 Main Street  
Cambridge, MA 02139

**ASSIGNMENT**

WHEREAS, I/we, **Boris Engels**, a citizen of the Netherlands, having a mailing address of Novartis Institutes for BioMedical Research, Inc., 250 Massachusetts Avenue, Cambridge, MA 02139; hereinafter generally referred to as "ASSIGNOR," have invented a certain new and useful

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AND, WHEREAS, **Novartis Institutes for BioMedical Research, Inc.**, hereinafter referred to as the "ASSIGNEE", of 250 Massachusetts Avenue, Cambridge, MA 02139, a company organized by the laws of Delaware, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and to any patent application(s) corresponding thereto, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in exchange for valuable consideration from the receipt of which is hereby acknowledged and intending to be bound, I, the said assignor, have sold, assigned, transferred and set over, effective as of the execution date of this assignment and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title

<sup>1</sup> We appoint, authorize and request the attorneys appointed in said application to hereafter complete this assignment by inserting in the spaces provided above the filing date and serial number of said application(s) when known.

and interest in and to said inventions or improvements and said provisional application and any and all corresponding patent application(s) and continuations, divisions and renewals of and substitutes for said corresponding patent application(s), and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in my name corresponding patent applications for Letters Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me had this assignment, sale and transfer not been made.

AND I hereby covenant that I have full right to convey the entire interest herein assigned, and that I have not executed and will not execute any agreement in conflict herewith, and I further covenant and agree that I will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees or legal representatives, and I agree to communicate to said assignee, or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

AND I hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents of applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

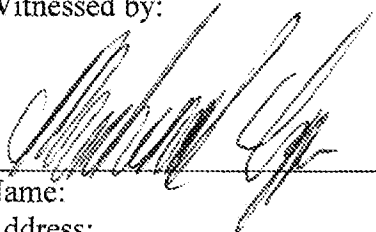
IN WITNESS WHEREOF, I have hereunto set my hand and seal.



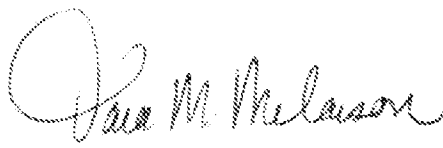
9/25/2017  
Date

B. Engels  
Boris Engels

Witnessed by:

  
Name:  
Address:

**Michaiah Copp**  
700 Main Street  
Cambridge, MA 02139

  
Name:  
Address:

**Tara M. Melanson**  
700 Main Street  
Cambridge, MA 02139

**Novartis Institutes for BioMedical Research Inc.**

Executed this 25<sup>th</sup> day of September, 2017.

BY Kathleen M. Drury  
Name: Kathleen M. Drury  
Title: Authorized Signatory

Witnessed by:

[Signature]  
Name:

Address: **Michaiah Copp  
700 Main Street  
Cambridge, MA 02139**

Tara M. Melanson  
Name:

Address: **Tara M. Melanson  
700 Main Street  
Cambridge, MA 02139**

**ASSIGNMENT**

**WHEREAS**, I/we, **Brian Granda**, a citizen of the United States of America, having a mailing address of Novartis Institutes for BioMedical Research, Inc., 250 Massachusetts Avenue, Cambridge, MA 02139; hereinafter generally referred to as "ASSIGNOR," have invented a certain new and useful

**TREATMENT OF CANCER USING CHIMERIC ANTIGEN RECEPTORS**

filed in the United States Patent and Trademark Office on **October 7, 2016** and accorded Patent Application No.: **62/405,520**;

and filed as a PCT Application on October 6, 2017 and accorded International Application No.: PCT/US2017/055627 ;

and filed in the United States Patent and Trademark Office on October 6, 2017 and accorded Patent Application No.: 15/727402 ;<sup>1</sup>

**AND, WHEREAS, Novartis Institutes for BioMedical Research, Inc.**, hereinafter referred to as the "ASSIGNEE", of 250 Massachusetts Avenue, Cambridge, MA 02139, a company organized by the laws of Delaware, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and to any patent application(s) corresponding thereto, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in exchange for valuable consideration from the receipt of which is hereby acknowledged and intending to be bound, I, the said assignor, have sold, assigned, transferred and set over, effective as of the execution date of this assignment and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title and interest in and to said inventions or improvements and said provisional application and any and all corresponding patent application(s) and continuations, divisions and renewals of and substitutes for said corresponding patent application(s), and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in my name corresponding patent applications for Letters

---

<sup>1</sup> We appoint, authorize and request the attorneys appointed in said application to hereafter complete this assignment by inserting in the spaces provided above the filing date and serial number of said application when known.

Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me had this assignment, sale and transfer not been made.

AND I hereby covenant that I have full right to convey the entire interest herein assigned, and that I have not executed and will not execute any agreement in conflict herewith, and I further covenant and agree that I will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees or legal representatives, and I agree to communicate to said assignee, or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

AND I hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents of applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

IN WITNESS WHEREOF, I have hereunto set my hand and seal.

2/15/2017  
Date

[Signature]  
Brian Granda

Witnessed by:

[Signature]  
Name:  
Address:

Safiya Watson  
700 Main Street  
Cambridge, MA 02139

[Signature]  
Name:  
Address:

Michaiah Copp  
700 Main Street  
Cambridge, MA 02139

**Novartis Institutes for BioMedical Research Inc.**

Executed this 25<sup>th</sup> day of September, 2017.

BY Kathleen M. Drury  
Name: Kathleen M. Drury  
Title: Authorized Signatory

Witnessed by:

[Signature]

Name:

Address:

Michaiah Copp  
700 Main Street  
Cambridge, MA 02139

Tara M. Melanson

Name:

Address:

Tara M. Melanson  
700 Main Street  
Cambridge, MA 02139

**ASSIGNMENT**

WHEREAS, I/we, **Lu Huang**, a citizen of the United States of America, having a mailing address of Novartis Institutes for BioMedical Research, Inc., 250 Massachusetts Avenue Cambridge, MA 02139 US, USA; hereinafter generally referred to as "ASSIGNOR," have invented a certain new and useful

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NOW, THEREFORE, for and in exchange for valuable consideration from the receipt of which is hereby acknowledged and intending to be bound, I, the said assignor, have sold, assigned, transferred and set over, effective as of the execution date of this assignment and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title and interest in and to said inventions or improvements and said provisional application and any and all corresponding patent application(s) and continuations, divisions and renewals of and substitutes for said corresponding patent application(s), and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in my name corresponding patent applications for Letters

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AND I hereby covenant that I have full right to convey the entire interest herein assigned, and that I have not executed and will not execute any agreement in conflict herewith, and I further covenant and agree that I will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees or legal representatives, and I agree to communicate to said assignee, or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

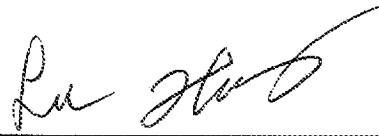
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IN WITNESS WHEREOF, I have hereunto set my hand and seal.



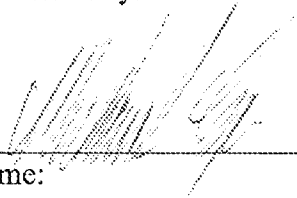
9/22/2017

Date



Lu Huang

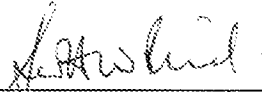
Witnessed by:



Name:

Address:

Michaiah Copp  
700 Main Street  
Cambridge, MA 02139



Name:

Address:

Scott W. RGO.  
700 Main Street  
Cambridge, MA 02139

**Novartis Institutes for BioMedical Research Inc.**

Executed this 25<sup>th</sup> day of September, 2017.


BY Kathleen M. Drury  
Name: Kathleen M Drury  
Title: Authorized Signatory

Witnessed by:

[Signature]  
Name:  
Address:

Michaiah Copp  
700 Main Street  
Cambridge, MA 02139

[Signature]  
Name:  
Address:

 Tara M. Melanson  
700 Main Street  
Cambridge, MA 02139

**ASSIGNMENT**

WHEREAS, I/we, **Ming Lei**, a citizen of China, having a mailing address of Novartis Institutes for BioMedical Research, Inc., 250 Massachusetts Avenue Cambridge, MA 02139 US, USA; hereinafter generally referred to as "ASSIGNOR," have invented a certain new and useful

**TREATMENT OF CANCER USING CHIMERIC ANTIGEN RECEPTORS**

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and filed in the United States Patent and Trademark Office on October 6, 2017 and accorded Patent Application No.: 15/727402 ;<sup>1</sup>

AND, WHEREAS, **Novartis Institutes for BioMedical Research, Inc.**, hereinafter referred to as the "ASSIGNEE", of 250 Massachusetts Avenue, Cambridge, MA 02139, a company organized by the laws of Delaware, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and to any patent application(s) corresponding thereto, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

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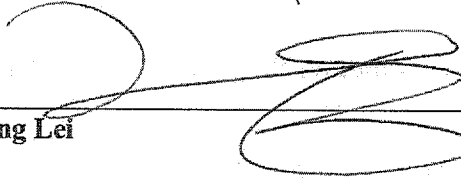
Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me had this assignment, sale and transfer not been made.

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AND I hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents of applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

IN WITNESS WHEREOF, I have hereunto set my hand and seal.

2017-September-23  
Date

  
Ming Lei

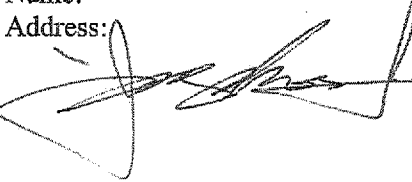
Witnessed by: Hongwu Wang

20 STEARNS RD 52  
BROOKLINE MA 02446

Name:  
Address:  
Hongwu Wang.

JINGZHOU LI

145 LACONIA ST.  
Lexington, MA 02420

Name:  
Address:  


**Novartis Institutes for BioMedical Research Inc.**

Executed this 25<sup>th</sup> day of September, 2017.

BY Kathleen M. Drury  
Name: Kathleen M Drury  
Title: Authorized Signatory

Witnessed by:

[Signature]  
Name:  
Address: **Michaiah Copp  
700 Main Street  
Cambridge, MA 02139**

[Signature]  
Name:  
Address: **Tara M. Melanson  
700 Main Street  
Cambridge, MA 02139**

**ASSIGNMENT**

WHEREAS, I/we, **Na Li**, a citizen of the U.S., having a mailing address of Novartis Institutes for BioMedical Research, Inc., 250 Massachusetts Avenue Cambridge, MA 02139 US, USA; hereinafter generally referred to as "ASSIGNOR," have invented a certain new and useful

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and filed as a PCT Application on October 6, 2017 and accorded International Application No.: PCT/US2017/055627 ;

and filed in the United States Patent and Trademark Office on October 6, 2017 and accorded Patent Application No.: 15/727402 ;<sup>1</sup>

AND, WHEREAS, **Novartis Institutes for BioMedical Research, Inc.**, hereinafter referred to as the "ASSIGNEE", of 250 Massachusetts Avenue, Cambridge, MA 02139, a company organized by the laws of Delaware, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and to any patent application(s) corresponding thereto, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in exchange for valuable consideration from the receipt of which is hereby acknowledged and intending to be bound, I, the said assignor, have sold, assigned, transferred and set over, effective as of the execution date of this assignment and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title and interest in and to said inventions or improvements and said provisional application and any and all corresponding patent application(s) and continuations, divisions and renewals of and substitutes for said corresponding patent application(s), and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in my name corresponding patent applications for Letters

<sup>1</sup> We appoint, authorize and request the attorneys appointed in said application to hereafter complete this assignment by inserting in the spaces provided above the filing date and serial number of said application(s) when known.

Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me had this assignment, sale and transfer not been made.

AND I hereby covenant that I have full right to convey the entire interest herein assigned, and that I have not executed and will not execute any agreement in conflict herewith, and I further covenant and agree that I will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees or legal representatives, and I agree to communicate to said assignee, or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

AND I hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents of applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

IN WITNESS WHEREOF, I have hereunto set my hand and seal.



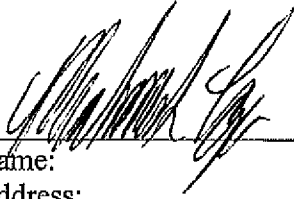
September 25, 2017

Date

Na Li

Na Li

Witnessed by:



Name:

Address:

**Michaiah Copp**  
700 Main Street  
Cambridge, MA 02139



Name:

Address:

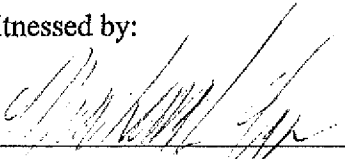
**Tara M. Melanson**  
700 Main Street  
Cambridge, MA 02139

**Novartis Institutes for BioMedical Research Inc.**

Executed this 25<sup>th</sup> day of SEPTEMBER, 2017.

BY Kathleen M. Drury  
Name: Kathleen M. Drury  
Title: Authorized Signatory

Witnessed by:

  
Name:  
Address:  
**Michaiiah Copp  
700 Main Street  
Cambridge, MA 02139**

  
Name:  
Address:  
 **Tara M. Melanson  
700 Main Street  
Cambridge, MA 02139**

**ASSIGNMENT**

WHEREAS, I/we, **Jimin Zhang**, a citizen of the United States of America, having a mailing address of Novartis Institutes for BioMedical Research, Inc., 250 Massachusetts Avenue, Cambridge, MA 02139 US, USA; hereinafter generally referred to as "ASSIGNOR," have invented a certain new and useful

**TREATMENT OF CANCER USING CHIMERIC ANTIGEN RECEPTORS**

filed in the United States Patent and Trademark Office on **October 7, 2016** and accorded Patent Application No.: **62/405,520**;

and filed as a PCT Application on October 6, 2017 and accorded International Application No.: PCT/US2017/055627 ;

and filed in the United States Patent and Trademark Office on October 6, 2017 and accorded Patent Application No.: 15/727402 ;<sup>1</sup>

AND, WHEREAS, **Novartis Institutes for BioMedical Research, Inc.**, hereinafter referred to as the "ASSIGNEE", of 250 Massachusetts Avenue, Cambridge, MA 02139, a company organized by the laws of Delaware, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and to any patent application(s) corresponding thereto, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in exchange for valuable consideration from the receipt of which is hereby acknowledged and intending to be bound, I, the said assignor, have sold, assigned, transferred and set over, effective as of the execution date of this assignment and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title and interest in and to said inventions or improvements and said provisional application and any and all corresponding patent application(s) and continuations, divisions and renewals of and substitutes for said corresponding patent application(s), and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in my name corresponding patent applications for Letters

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<sup>1</sup> We appoint, authorize and request the attorneys appointed in said application to hereafter complete this assignment by inserting in the spaces provided above the filing date and serial number of said application(s) when known.

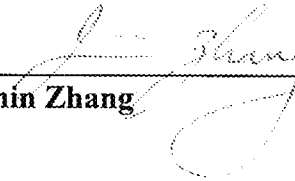
Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me had this assignment, sale and transfer not been made.

AND I hereby covenant that I have full right to convey the entire interest herein assigned, and that I have not executed and will not execute any agreement in conflict herewith, and I further covenant and agree that I will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees or legal representatives, and I agree to communicate to said assignee, or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

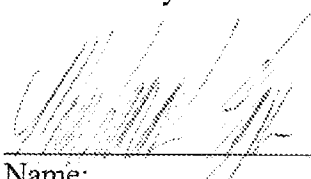
AND I hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents of applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

IN WITNESS WHEREOF, I have hereunto set my hand and seal.

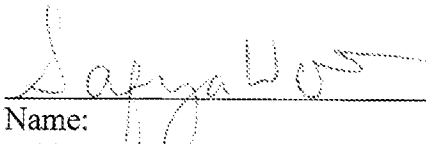
9/21/2017  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Jimin Zhang

Witnessed by:

  
\_\_\_\_\_  
Name:  
Address:

**Michaiah Copp**  
700 Main Street  
Cambridge, MA 02139

  
\_\_\_\_\_  
Name:  
Address:

**Safiya Watson**  
700 Main Street  
Cambridge, MA 02139

**Novartis Institutes for BioMedical Research Inc.**

Executed this 25<sup>th</sup> day of September, 2017.

BY Kathleen M. Drung  
Name: Kathleen M. Drung  
Title: Authorized Signatory

Witnessed by:

[Signature]  
Name:  
Address: **Michaiah Copp  
700 Main Street  
Cambridge, MA 02139**

[Signature]  
Name:  
Address: **Tara M. Melanson  
700 Main Street  
Cambridge, MA 02139**