

A 7631082



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

April 20, 2017

THIS IS TO CERTIFY THAT ANNEXED IS A TRUE COPY FROM THE
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JANUARY 29, 2015.

By Authority of the
Under Secretary of Commerce for Intellectual Property
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R
R GLOVER
Certifying Officer

Number

REEL: 034442 FRAME

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT3203572

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
MATTHEW ALEXANDER	01/22/2015
SOGOLE BAHMANYAR	01/23/2015
JOHN FREDERICK BOYLAN	01/22/2015
JOSHUA HANSEN	01/23/2015
DEHUA HUANG	01/22/2015
ROBERT HUBBARD	01/22/2015
BRANDON JEFFY	01/23/2015
JIM LEISTEN	01/23/2015
METHRAN MOGHADDAM	01/22/2015
RAJ K. RAHEJA	01/23/2015
HEATHER RAYMON	01/23/2015
KIMBERLY SCHWARZ	01/28/2015
MARIANNE SLOSS	01/24/2015
EDUARDO TORRES	01/23/2015
TAM MINH TRAN	01/14/2015
SHUICHAN XU	01/22/2015
JINGJING ZHAO	01/23/2015

RECEIVING PARTY DATA

Name:	SIGNAL PHARMACEUTICALS LLC
Street Address:	10300 CAMPUS POINT DRIVE SUITE 100
City:	SAN DIEGO
State/Country:	CALIFORNIA
Postal Code:	92121

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	62060339

CORRESPONDENCE DATA

Fax Number: (404)581-8330

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent
PATENT

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 4045818339
Email: mmao@jonesday.com
Correspondent Name: MARTIN MAO
Address Line 1: 1420 PEACHTREE STREET, N.E.
Address Line 2: SUITE 800
Address Line 4: ATLANTA, GEORGIA 30309

ATTORNEY DOCKET NUMBER:	10624-368-888
NAME OF SUBMITTER:	ZHAN MAO
SIGNATURE:	/Zhan Mao/
DATE SIGNED:	01/29/2015

Total Attachments: 36

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ASSIGNMENT

WHEREAS, WE, **MATTHEW ALEXANDER**, citizen of the United States of America, having a mailing address of 12488 Carmel Cape, San Diego, California 92130, the United States of America, residing at San Diego, California, the United States of America; **SOGOLE BAHMANYAR**, citizen of the United States of America, having a mailing address of 4738 Caminito Lapiz, San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **JOHN FREDERICK BOYLAN**, citizen of the United States of America, having a mailing address of 10486 Harvest View Way, San Diego, California 92128, the United States of America residing at Bedminster, New Jersey, the United States of America; **JOSHUA HANSEN**, citizen of the United States of America, having a mailing address of 5633 Bellevue Avenue, La Jolla, California 92037, the United States of America residing at La Jolla, California, the United States of America; **DEHUA HUANG**, citizen of the United States of America, having a mailing address of 11363 Stable Glen Place, San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **ROBERT HUBBARD**, citizen of the United States of America, having a mailing address of 7684 Marker Road, San Diego, California 92078, the United States of America residing at San Diego, California, the United States of America; **BRANDON JEFFY**, citizen of the United States of America, having a mailing address of 13120 Chambord Way, San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **JIM LEISTEN**, citizen of the United States of America, having a mailing address of 771 Leeward Avenue, San Marcos, California 92078, the United States of America residing at San Marcos, California, the United States of America; **MEHRAN MOGHADDAM**, citizen of the United States of America, having a mailing address of 4971 Sterling Grove Lane, San Diego, California 92130, the United States of America, residing at Carlsbad, California, the United States of America; **RAJ K. RAHEJA**, citizen of the United States of America, having a mailing address of 12739 Beeler Creek Trail, Poway, California 92064, the United States of America residing at Poway, California, the United States of America; **HEATHER, RAYMON**, citizen of the United States of America, having a mailing address of 3520 Vista de la Orilla, San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **KIMBERLY SCHWARZ**, citizen of the United States of America, having a mailing address of 4342 Post Road., San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **MARIANNE SLOSS**, citizen of the United States of America, having a mailing address of 11979 Dapple Way, San Diego, California 92128, the United States of America residing at San Diego, California, the United States of America; **EDUARDO TORRES**, citizen of the United States of America, having a mailing address of 1855 49th Street, San Diego, California 92102, the United States of America residing at San Diego, California, the United States of America; **TAM MINH TRAN**, citizen of the United States of America, having a mailing address of 8953 Libra Dr., San Diego, California 92126, the United States of America residing at San Diego, California, the United States of America; **SHUICHAN XU**, citizen of the United States of America, having a mailing address of 9650 Deer Trail Place, San Diego, California, 92127, the United States of America residing at San Diego, California, the United States of America; and **JINGJING ZHAO**, citizen of the United States of America, having a mailing address of 8323 Bryn Glen Way, San Diego, California 92129, the United States of America residing at San Diego, California, the United States of America, ASSIGNORS, are the inventors of the invention in **SUBSTITUTED AMINOPURINE COMPOUNDS, COMPOSITIONS THEREOF, AND METHODS OF TREATMENT THEREWITH** for which we have filed a provisional application for a Patent of the United States

☒ which is identified by Jones Day docket no. 10624-368-888

☒ which was filed on October 6, 2014, Application No. 62/060,339

☐ We hereby authorize and request attorney(s) at Jones Day, to insert here in parentheses (Application number _____, filed _____) the filing date and application number of said application when known.

and WHEREAS, **SIGNAL PHARMACEUTICALS LLC**, a corporation organized and existing under the laws of the state of California, and having an office for the transaction of business at 10300 Campus Point Drive, Suite 100 San Diego, CA 92121, the United States of America, ASSIGNEE, is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States provisional application and all applications claiming priority thereto under 35 U.S.C. § 119(e) and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof; and all right to sue for infringement including past infringement;

AND WE HEREBY authorize and request the Commissioner for Patents and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date <u>1/22</u> , 2015	<u>Matthew Alexander</u> MATTHEW ALEXANDER	L.S.
Date <u>1/23</u> , 2015	<u>Sogole Bahmanyar</u> SOGOLE BAHMANYAR	L.S.
Date <u>1/22</u> , 2015	<u>John Frederick Boylan</u> JOHN FREDERICK BOYLAN	L.S.
Date <u>1/23</u> , 2015	<u>Joshua Hansen</u> JOSHUA HANSEN	L.S.
Date <u>1/22</u> , 2015	<u>Dehua Huang</u> DEHUA HUANG	L.S.
Date <u>1/23</u> , 2015	<u>Robert Hubbard</u> ROBERT HUBBARD	L.S.
Date <u>1/23</u> , 2015	<u>Brandon Jeffy</u> BRANDON JEFFY	L.S.
Date <u>1/23</u> , 2015	<u>Jim Leisten</u> JIM LEISTEN	L.S.
Date <u>1/22</u> , 2015	<u>Mehran Moghaddam</u> MEHRAN MOGHADDAM	L.S.
Date <u>1/23</u> , 2015	<u>Raj K. Rameja</u> RAJ K. RAMEJA	L.S.
Date <u>1/23</u> , 2015	<u>Heather Raymon</u> HEATHER RAYMON	L.S.

U.S. Application No. 62/060,339; Jones Day Docket No.: 10624-368-999 ^{888 m}

Date _____, 2015 KIMBERLY SCHWARZ L.S.

Date _____, 2015 MARIANNE SLOSS L.S.

Date 01/23, 2015  L.S.
EDUARDO TORRES

Date 01/14, 2015  L.S.
TAM MINH TRAN

Date 01/22, 2015  L.S.
SHUICHAN XU

Date 01/22, 2015  L.S.
JINGJING ZHAO

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA

COUNTY OF San Diego

On January 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared MATTHEW ALEXANDER, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

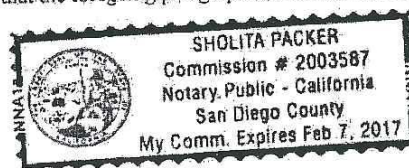
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



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STATE OF CALIFORNIA

COUNTY OF San Diego

On January 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared SOGOLE BAHMANYAR, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

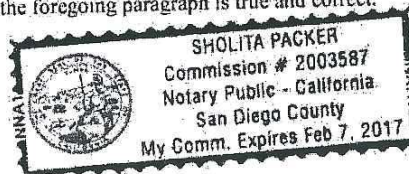
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



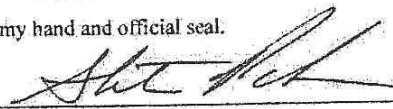
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF)
COUNTY OF SAN DIEGO) SS.:

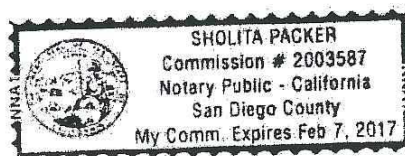
On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared JOHN FREDERICK BOYLAN, personally known to me on the basis of satisfactory evidence to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature



(Seal)



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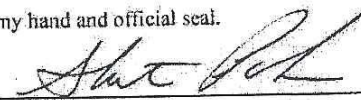
STATE OF CALIFORNIA)
COUNTY OF SAN DIEGO)

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared JOSHUA HANSEN, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

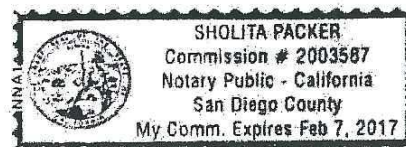
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature



(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared DEHUA HUANG, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

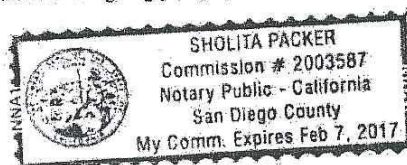
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared ROBERT HUBBARD, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

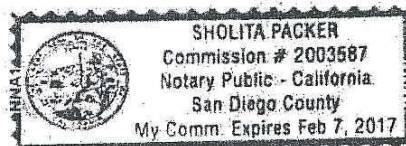
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared BRANDON JEFFY, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

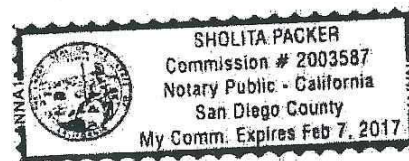
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

[Handwritten Signature]

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared JIM LEISTEN, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

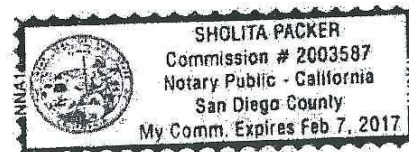
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

[Handwritten Signature]

(Seal)



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STATE OF CALIFORNIA)

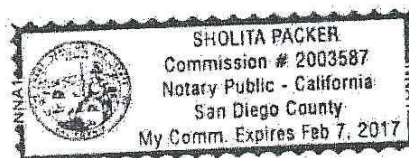
COUNTY OF San Diego)

On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared MEHRAN MOGHADDAM, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Sholita Packer (Seal)



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STATE OF CALIFORNIA)

COUNTY OF San Diego)

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared RAJ K. RAHEJA, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Sholita Packer (Seal)



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STATE OF CALIFORNIA)

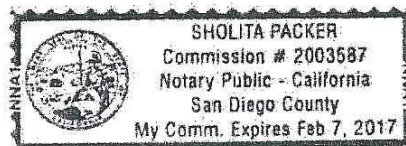
COUNTY OF SAN DIEGO)

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared **HEATHER RAYMON**, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: *Sholita Packer* (Seal)



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STATE OF CALIFORNIA)

COUNTY OF)

On _____ before me, _____, Notary Public, personally appeared **KIMBERLY SCHWARZ**, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)

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STATE OF CALIFORNIA)

COUNTY OF)

On _____ before me, _____, Notary Public, personally appeared **MARIANNE SLOSS**, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)

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STATE OF CALIFORNIA)

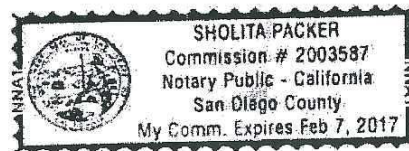
COUNTY OF SAN DIEGO)

On January 23, 2015 before me, Sholita Packer, Notary Public, personally appeared **EDUARDO TORRES**, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Sholita Packer (Seal)



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STATE OF CALIFORNIA

COUNTY OF San Diego

On JANUARY 14, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared TAM MINH TRAN, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she~~/they executed the same in his/~~her~~/their authorized capacity(ies), and that by his/~~her~~/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

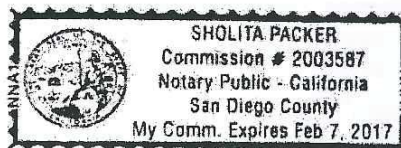
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA

COUNTY OF San Diego

On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared SHUICHAN XU, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she~~/they executed the same in his/~~her~~/their authorized capacity(ies), and that by his/~~her~~/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

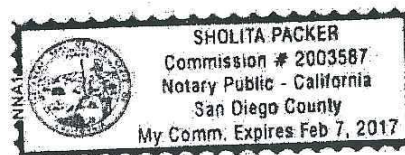
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WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



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)

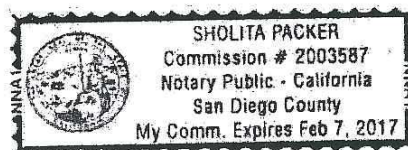
1

On JANUARY 23, 2015 before me, SHOLITA Packer

WITNESS my hand and official seal.

SS my hand and official seal.

e. 



ACCEPTED AND AGREED TO BY ASSIGNEE, SIGNAL PHARMACEUTICALS LLC:

[Handwritten signature]

1	23	15
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GREG REYES

Sr. VP Drug Discovery

ASSIGNMENT

WHEREAS, WE, **MATTHEW ALEXANDER**, citizen of the United States of America, having a mailing address of 12488 Carmel Cape, San Diego, California 92130, the United States of America, residing at San Diego, California, the United States of America; **SOGOLE BAHMANYAR**, citizen of the United States of America, having a mailing address of 4738 Caminito Lapid, San Diego, California 92130, the United States of America, residing at San Diego, California, the United States of America; **JOHN FREDERICK BOYLAN**, citizen of the United States of America, having a mailing address of 10486 Harvest View Way, San Diego, California 92128, the United States of America, residing at Bedminster, New Jersey, the United States of America; **JOSHUA HANSEN**, citizen of the United States, having a mailing address of 5633 Bellevue Avenue, La Jolla, California 92037, the United States of America, residing at La Jolla, California, the United States of America; **DEHUA HUANG**, citizen of the United States of America, having a mailing address of 11363 Stable Glen Place, San Diego, California 92130, the United States of America, residing at San Diego, California, the United States of America; **ROBERT HUBBARD**, citizen of the United States of America, having a mailing address of 7684 Marker Road, San Diego, California 92078, the United States of America, residing at San Diego, California, the United States of America; **BRANDON JEFFY**, citizen of the United States of America, having a mailing address of 13120 Chambord Way, San Diego, California 92130, the United States of America, residing at San Diego, California, the United States of America; **JIM LEISTEN**, citizen of the United States of America, having a mailing address of 771 Leeward Avenue, San Marcos, California 92078, the United States of America, residing at San Marcos, California, the United States of America; **MEHRAN MOGHADDAM**, citizen of the United States of America, having a mailing address of 4971 Sterling Grove Lane, San Diego, California 92130, the United States of America, residing at Carlsbad, California, the United States of America; **RAJ K. RAHEJA**, citizen of the United States of America, having a mailing address of 12739 Beeler Creek Trail, Poway, California 92064, the United States of America, residing at Poway, California, the United States of America; **HEATHER, RAYMON**, citizen of the United States of America, having a mailing address of 3520 Vista de la Orilla, San Diego, California 92117, the United States of America, residing at San Diego, California, the United States of America; **KIMBERLY SCHWARZ**, citizen of the United States of America, having a mailing address of 4342 Post Road., San Diego, California 92117, the United States of America, residing at San Diego, California, the United States of America; **MARIANNE SLOSS**, citizen of the United States of America, having a mailing address of 11979 Dapple Way, San Diego, California 92128, the United States of America, residing at San Diego, California, the United States of America; **EDUARDO TORRES**, citizen of the United States of America, having a mailing address of 1855 49th Street, San Diego, California 92102, the United States of America, residing at San Diego, California, the United States of America; **TAM MINH TRAN**, citizen of the United States of America, having a mailing address of 8953 Libra Dr., San Diego, California 92126, the United States of America, residing at San Diego, California, the United States of America; **SHUICHAN XU**, citizen of the United States of America, having a mailing address of 9650 Deer Trail Place, San Diego, California, 92127, the United States of America, residing at San Diego, California, the United States of America; and **JINGJING ZHAO**, citizen of the United States of America, having a mailing address of 8323 Bryn Glen Way, San Diego, California 92129, the United States of America, residing at San Diego, California, the United States of America, ASSIGNS, are the inventors of the invention in **SUBSTITUTED AMINOPURINE COMPOUNDS, COMPOSITIONS THEREOF, AND METHODS OF TREATMENT THEREWITH** for which we have filed a provisional application for a Patent of the United States

- ☒ which is identified by Jones Day docket no. 10624-368-888
☒ which was filed on October 6, 2014, Application No. 62/060,339
☐ We hereby authorize and request attorney(s) at Jones Day, to insert here in parentheses (Application number _____, filed _____) the filing date and application number of said application when known.

and WHEREAS, **SIGNAL PHARMACEUTICALS LLC**, a corporation organized and existing under the laws of the state of California, and having an office for the transaction of business at 10300 Campus Point Drive, Suite 100 San Diego, CA 92121, the United States of America, ASSIGNEE, is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States provisional application and all applications claiming priority thereto under 35 U.S.C. § 119(e) and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof; and all right to sue for infringement including past infringement;

AND WE HEREBY authorize and request the Commissioner for Patents and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date 1/22, 2015

Matthew Alexander L.S.
MATTHEW ALEXANDER

Date 1/23, 2015

Sogole Bahmanyar L.S.
SOGOLE BAHMANYAR

Date 1/22, 2015

John Frederick Boylan L.S.
JOHN FREDERICK BOYLAN

Date 1/23, 2015

Joshua Hansen L.S.
JOSHUA HANSEN

Date 1/22, 2015

Dehua Huang L.S.
DEHUA HUANG

Date 1/23, 2015

Robert Hubbard L.S.
ROBERT HUBBARD

Date 1/23, 2015

Brandon Jeffy L.S.
BRANDON JEFFY

Date 1/23, 2015

Jim Leisten L.S.
JIM LEISTEN

Date 1/22, 2015

Mehran Moghaddam L.S.
MEHRAN MOGHADDAM

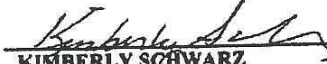
Date 1/23, 2015

Raj K. Raheja L.S.
RAJ K. RAHEJA

Date 1/23, 2015

Heather Raymon L.S.
HEATHER RAYMON

U.S. Application No. 62/060,339; Jones Day Docket No.: 10624-368-999

Date Jan 20, 15 . 2015  L.S.
KIMBERLY SCHWARZ

Date _____ . 2015 _____ L.S.
MARIANNE SLOSS

Date _____ . 2015 _____ L.S.
EDUARDO TORRES

Date _____ . 2015 _____ L.S.
TAM MINH TRAN

Date _____ . 2015 _____ L.S.
SHUICHAN XU

Date _____ . 2015 _____ L.S.
JINGJING ZHAO

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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared MATTHEW ALEXANDER, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

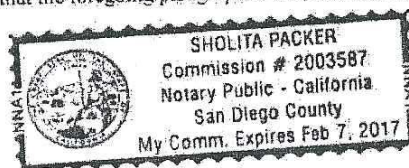
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared SOGOLE BAHMANYAR, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

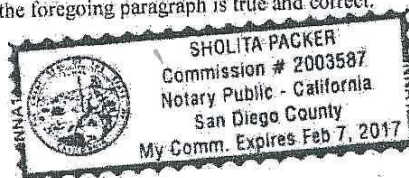
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



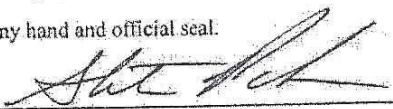
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STATE OF)
COUNTY OF San Diego) SS.:

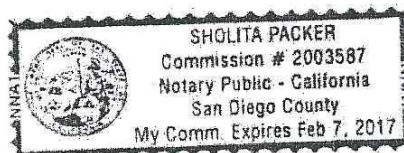
On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared JOHN FREDERICK BOYLAN, personally known to me on the basis of satisfactory evidence to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature



(Seal)



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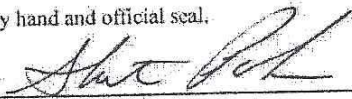
STATE OF CALIFORNIA)
COUNTY OF SAN DIEGO)

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared JOSHUA HANSEN, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

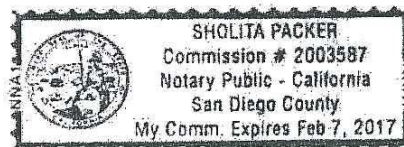
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WITNESS my hand and official seal.

Signature



(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

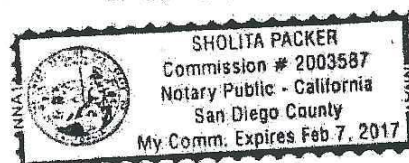
On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared DEHUA HUANG, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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Signature

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

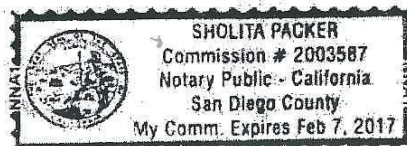
On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared ROBERT HUBBARD, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

Signature

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared BRANDON JEFFY, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

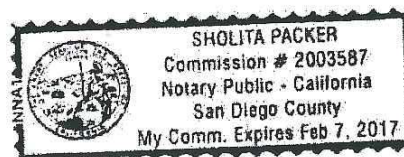
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared JIM LEISTEN, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

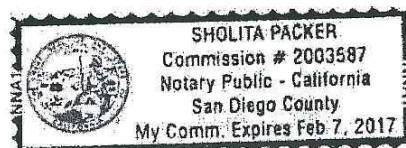
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WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



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STATE OF CALIFORNIA)

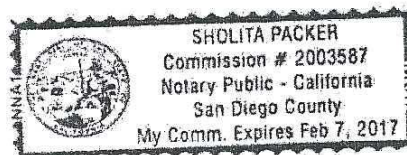
COUNTY OF San Diego)

On January 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared MEHRAN MOGHADDAM, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Sholita Packer (Seal)



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STATE OF CALIFORNIA)

COUNTY OF San Diego)

On January 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared RAJ K. RAHEJA, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Sholita Packer (Seal)



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STATE OF CALIFORNIA)

COUNTY OF)

On _____ before me, _____, Notary Public, personally appeared **HEATHER RAYMON**, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)

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STATE OF CALIFORNIA)

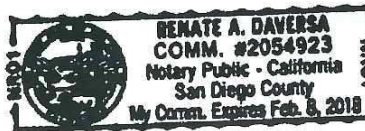
COUNTY OF)

On January 28 2015 before me, Renate A. Daversa, Notary Public, personally appeared **KIMBERLY SCHWARZ**, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Renate A. Daversa (Seal)
Notary Public



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STATE OF CALIFORNIA)

COUNTY OF)

On _____ before me, _____, Notary Public, personally appeared **MARIANNE SLOSS**, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

Signature _____ (Seal)

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STATE OF CALIFORNIA)

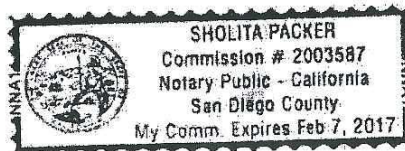
COUNTY OF SAN DIEGO)

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared **EDUARDO TORRES**, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

Signature Sholita Packer (Seal)



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STATE OF CALIFORNIA)

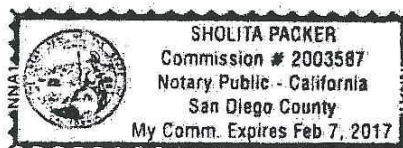
COUNTY OF San Diego)

On JANUARY 14, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared TAM MINH TRAN, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

Signature Sholita Packer (Seal)



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STATE OF CALIFORNIA)

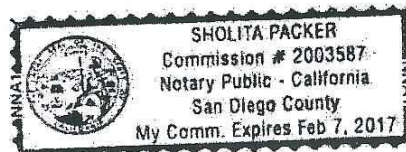
COUNTY OF San Diego)

On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared SHUICHAN XU, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

Signature Sholita Packer (Seal)



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STATE OF CALIFORNIA

COUNTY OF San Diego

On January 23, 2015 before me, Sholita Packer, Notary Public, personally appeared JINGJING ZHAO, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

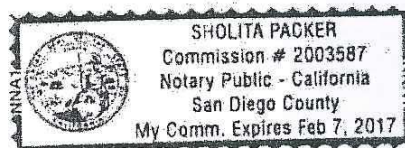
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



ACCEPTED AND AGREED TO BY ASSIGNEE, SIGNAL PHARMACEUTICALS LLC:

Signature

Greg Reyes

Date:

1/23/15

Printed name

Greg Reyes

Title

Sr. VP Drug Discovery

ASSIGNMENT

WHEREAS, WE, **MATTHEW ALEXANDER**, citizen of the United States of America, having a mailing address of 12488 Carmel Cape, San Diego, California 92130, the United States of America, residing at San Diego, California, the United States of America; **SOGOLE BAHMANYAR**, citizen of the United States of America, having a mailing address of 4738 Caminito Lapiz, San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **JOHN FREDERICK BOYLAN**, citizen of the United States of America, having a mailing address of 10486 Harvest View Way, San Diego, California 92128, the United States of America residing at Bedminster, New Jersey, the United States of America; **JOSHUA HANSEN**, citizen of the United States, having a mailing address of 5633 Bellevue Avenue, La Jolla, California 92037, the United States of America residing at La Jolla, California, the United States of America; **DEHUA HUANG**, citizen of the United States of America, having a mailing address of 11363 Stable Glen Place, San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **ROBERT HUBBARD**, citizen of the United States of America, having a mailing address of 7684 Marker Road, San Diego, California 92078, the United States of America residing at San Diego, California, the United States of America; **BRANDON JEFFY**, citizen of the United States of America, having a mailing address of 13120 Chambord Way, San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **JIM LEISTEN**, citizen of the United States of America, having a mailing address of 771 Leeward Avenue, San Marcos, California 92078, the United States of America residing at San Marcos, California, the United States of America; **MEHRAN MOGHADDAM**, citizen of the United States of America, having a mailing address of 4971 Sterling Grove Lane, San Diego, California 92130, the United States of America, residing at Carlsbad, California, the United States of America; **RAJ K. RAHEJA**, citizen of the United States of America, having a mailing address of 12739 Beeler Creek Trail, Poway, California 92064, the United States of America residing at Poway, California, the United States of America; **HEATHER, RAYMON**, citizen of the United States of America, having a mailing address of 3520 Vista de la Orilla, San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **KIMBERLY SCHWARZ**, citizen of the United States of America, having a mailing address of 4342 Post Road., San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **MARIANNE SLOSS**, citizen of the United States of America, having a mailing address of 11979 Dapple Way, San Diego, California 92128, the United States of America residing at San Diego, California, the United States of America; **EDUARDO TORRES**, citizen of the United States of America, having a mailing address of 1855 49th Street, San Diego, California 92102, the United States of America residing at San Diego, California, the United States of America; **TAM MINH TRAN**, citizen of the United States of America, having a mailing address of 8953 Libra Dr., San Diego, California 92126, the United States of America residing at San Diego, California, the United States of America; **SHUICHAN XU**, citizen of the United States of America, having a mailing address of 9650 Deer Trail Place, San Diego, California, 92127, the United States of America residing at San Diego, California, the United States of America; and **JINGJING ZHAO**, citizen of the United States of America, having a mailing address of 8323 Bryn Glen Way, San Diego, California 92129, the United States of America residing at San Diego, California, the United States of America, ASSIGNORS, are the inventors of the invention in **SUBSTITUTED AMINOPURINE COMPOUNDS, COMPOSITIONS THEREOF, AND METHODS OF TREATMENT THEREWITH** for which we have filed a provisional application for a Patent of the United States

- ☒ which is identified by Jones Day docket no. 10624-368-888
☒ which was filed on October 6, 2014, Application No. 62/060,339
☐ We hereby authorize and request attorney(s) at Jones Day, to insert here in parentheses (Application number _____, filed _____) the filing date and application number of said application when known.

and WHEREAS, **SIGNAL PHARMACEUTICALS LLC**, a corporation organized and existing under the laws of the state of California, and having an office for the transaction of business at 10300 Campus Point Drive, Suite 100 San Diego, CA 92121, the United States of America, ASSIGNEE, is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States provisional application and all applications claiming priority thereto under 35 U.S.C. § 119(e) and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof; and all right to sue for infringement including past infringement;

AND WE HEREBY authorize and request the Commissioner for Patents and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date 1/22, 2015 Matthew Alexander L.S.
MATTHEW ALEXANDER

Date 1/23, 2015 Sogole Bahmanyar L.S.
SOGOLE BAHMANYAR

Date 1/22, 2015 John Frederick Boylan L.S.
JOHN FREDERICK BOYLAN

Date 1/23, 2015 Joshua Hansen L.S.
JOSHUA HANSEN

Date 1/22, 2015 Dehua Huang L.S.
DEHUA HUANG

Date 1/23, 2015 Robert Hubbard L.S.
ROBERT HUBBARD

Date 1/23, 2015 Brandon Jeffy L.S.
BRANDON JEFFY

Date 1/23, 2015 Jim Leisten L.S.
JIM LEISTEN

Date 1/22, 2015 Mehran Moghaddam L.S.
MEHRAN MOGHADDAM

Date 1/23, 2015 Raj K. Raheja L.S.
RAJ K. RAHEJA

Date 1/23, 2015 Heather Raymon L.S.
HEATHER RAYMON

Date _____, 2015 _____ L.S.
KIMBERLY SCHWARZ

Date 1/24/15, 2015 _____ L.S.

MARIANNE SLOSS

Date _____, 2015 _____ L.S.
EDUARDO TORRES

Date _____, 2015 _____ L.S.
TAM MINH TRAN

Date _____, 2015 _____ L.S.
SHUICHAN XU

Date _____, 2015 _____ L.S.
JINGJING ZHAO

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared MATTHEW ALEXANDER, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

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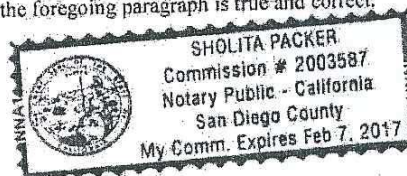
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Signature

Sholita Packer

(Seal)



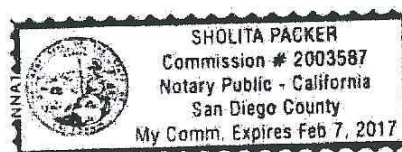
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STATE OF)
COUNTY OF SAN DIEGO) SS:

On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared JOHN FREDERICK BOYLAN, personally known to me on the basis of satisfactory evidence to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature [Signature] (Seal)



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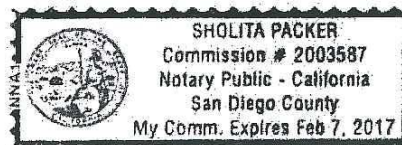
STATE OF CALIFORNIA)
COUNTY OF SAN DIEGO)

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared JOSHUA HANSEN, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature [Signature] (Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared DEHUA HUANG, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

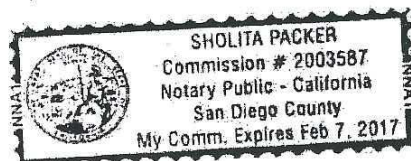
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

[Handwritten Signature]

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

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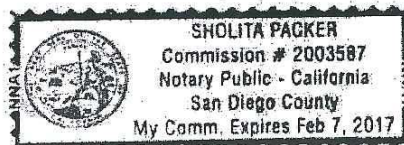
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WITNESS my hand and official seal.

Signature

[Handwritten Signature]

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared BRANDON JEFFY, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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Signature

Sholita Packer

(Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared JIM LEISTEN, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

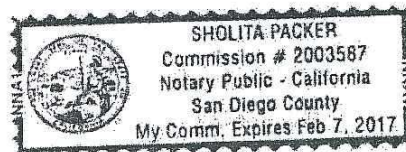
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WITNESS my hand and official seal.

Signature

Sholita Packer

(Seal)



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STATE OF CALIFORNIA

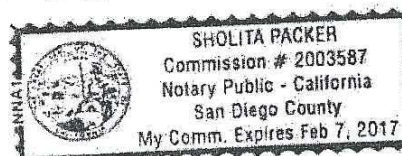
COUNTY OF SAN DIEGO

On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared MEHRAN MOGHADDAM, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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Signature [Signature] (Seal)



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STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared RAJ K. RAHEJA, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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Signature [Signature] (Seal)



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STATE OF CALIFORNIA

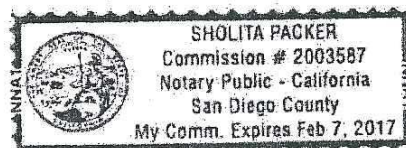
COUNTY OF SAN DIEGO

On JANUARY 23, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared HEATHER RAYMON, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

Signature [Signature] (Seal)



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STATE OF CALIFORNIA

COUNTY OF

On _____ before me, _____, Notary Public, personally appeared KIMBERLY SCHWARZ, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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Signature _____ (Seal)

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STATE OF CALIFORNIA

COUNTY OF

San Diego

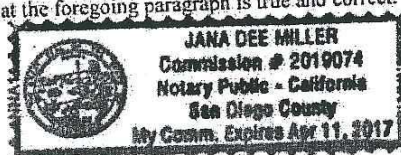
On 1-24-2015 before me, Jana Dee Miller, Notary Public, personally appeared MARIANNE SLOSS, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

Signature

Jana Dee Miller (Seal)



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STATE OF CALIFORNIA

COUNTY OF

On _____ before me, _____, Notary Public, personally appeared EDUARDO TORRES, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

Signature

(Seal)

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STATE OF CALIFORNIA

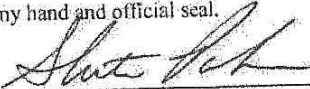
COUNTY OF SAN DIEGO

On JANUARY 14, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared TAM MINH TRAN, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she~~/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

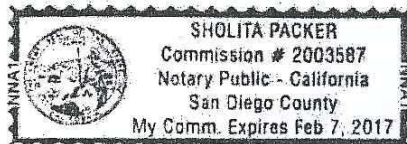
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Signature



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STATE OF CALIFORNIA

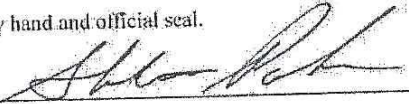
COUNTY OF SAN DIEGO

On JANUARY 22, 2015 before me, SHOLITA PACKER, Notary Public, personally appeared SHUICHAN XU, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she~~/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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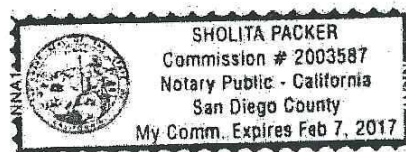
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WITNESS my hand and official seal.

Signature

[Signature]

(Seal)



ACCEPTED AND AGREED TO BY ASSIGNEE, SIGNAL PHARMACEUTICALS LLC:

Signature

[Signature]

Date:

1/23/15

Printed name

GREG REYES

Title

SR. VP Drug Discovery

DIRECTOR DIVISIÓN DE NUEVAS CREACIONES
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

E. S. D.

RESPUESTA A EXAMEN DE FORMA

En respuesta a las observaciones realizadas como resultado del examen de forma, es pertinente mencionar que las reivindicaciones definen de forma clara y razonablemente general la invención, razón por la que respetuosamente disiento de los comentarios del señor Examinador a este respecto. A continuación, sin embargo, se incluyen los argumentos y se mencionan las modificaciones realizadas para atender a cada uno de los requerimientos del Señor Examinador:

Inicialmente, me permito señalar que las reivindicaciones 40, 42 y 45 - 47 han sido canceladas. De acuerdo a esto, las objeciones sobre éstas se consideran superadas.

Ahora bien, respecto a la objeción por ser materia de excepción de patentabilidad el objeto de las reivindicaciones 42 a 45, me permito indicar de manera respetuosa nuestro desacuerdo, debido a que las reivindicaciones 43 y 44 (ahora reivindicaciones 41 y 42) se refieren específicamente a métodos *in vivo* (41) y *ex vivo* (42), los cuales son elegibles para evaluación de patentabilidad al ser métodos que **no** se llevan a cabo de manera directa sobre un humano o animal. Por lo anterior, consideramos que el objeto de las reivindicaciones 43 y 44 no hace parte de los métodos que se consideran como no patentables de acuerdo al artículo 20 de la Decisión 486 y, en consecuencia, son susceptibles de evaluación de patentabilidad.

Por otra parte, en cuanto a la objeción por falta de concisión en el pliego reivindicatorio, me permito señalar que la reivindicación 1 fue modificada, de manera que se aclara el alcance de los términos “*cicloalquilo*”, “*cicloalquilalquilo*”, “*heterociclilo no aromático*”, “*arilo*”, “*heteroarilo*”, “*alquilarilo*” y “*sustituido*”, indicando de manera específica el número de carbonos implicados en cada uno de los términos.

Cabe resaltar que con la indicación del alcance del término “sustituido” puede darse por entendido el alcance del término “no sustituido”, expresión que es ampliamente utilizada en el campo de estudio y puede ser fácilmente entendida por una persona medianamente versada en la materia, por lo que éste no fue incluido dentro de las aclaraciones. De igual manera, consideramos relevante resaltar que estas modificaciones se realizaron con base en la materia divulgada en la descripción de la presente solicitud, específicamente de acuerdo a los párrafos [0015] – [0021] y [0065] de la solicitud PCT.

Como resultado de las consideraciones aquí abordadas, se concluye que la totalidad de la materia que conforma la presente divulgación cumple a cabalidad con lo establecido por la legislación vigente, razón por la que solicito sean retiradas las respectivas objeciones y, consecuentemente, se proceda a continuar con el trámite de la presente solicitud.

Anexos

- i. Nuevo pliego reivindicatorio.

Atentamente,

JUAN PABLO CADENA SARMIENTO

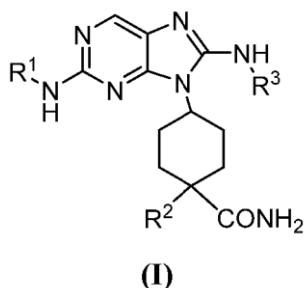
T.P. No. 57.492 del C.S.J.

C.C. 80.410.337 de Usaquén

Calle 70 A No. 4 – 41

REIVINDICACIONES

1. Un compuesto de la fórmula (I):



y sales farmacéuticamente aceptables, tautómeros, estereoisómeros, enantiómeros, e isopotólogos de los mismos,

caracterizado porque:

R¹ es alquilo de C₁₋₈ sustituido o no sustituido, cicloalquilo sustituido o no sustituido, cicloalquilalquilo sustituido o no sustituido, o heterociclilo no aromático sustituido o no sustituido;

R² es H o alquilo de C₁₋₃ sustituido o no sustituido;

R³ es fenilo, sustituido con uno o más halógenos, opcional y adicionalmente sustituido con uno o más sustituyentes independientemente seleccionados de alquilo de C₁₋₃ sustituido o no sustituido, CN, y -OR', en donde cada R' es independientemente alquilo de C₁₋₃ sustituido o no sustituido; siempre que el compuesto no sea

4-[2-[(1-metiletil)amino]-8-[(2,4,6-trifluorofenil)amino]-9H-purin-9-il]-*cis*-ciclohexancarboxamida, o

4-[8-[(2,4-difluorofenil)amino]-2-[(*trans*-4-hidroxiciclohexil)amino]-9H-purin-9-il]-*cis*-ciclohexancarboxamida

en donde un grupo cicloalquilo es un grupo alquilo cíclico saturado o parcialmente saturado de 3 a 10 átomos de carbono que tiene un anillo cíclico sencillo o múltiple condensado o anillos puenteados;

en donde un grupo heterocíclico no aromático es un cicloalquilo no aromático en el cual uno a cuatro de los átomos de carbono en el anillo se reemplazan independientemente con un heteroátomo del grupo que consiste de O, S y N;

en donde un grupo arilo es un grupo carbocíclico aromático de 6 a 14 átomos de carbono que tienen un anillo cíclico sencillo o anillos múltiples condensados;

en donde un grupo heteroarilo es un cicloalquilo aromático de 3 a 10 átomos de carbono que tienen un anillo cíclico sencillo o anillos múltiples condensados o anillos punteados en los cuales de 1 a 4 de los átomos de carbono del anillo son reemplazados independientemente con un heteroátomo del grupo que consiste de O, S y N;

en donde un grupo aralquilo es un radical de la fórmula: -alquil-aril;

en donde cuando un grupo alquilo se dice que está sustituido, es sustituido con cloro, iodo, bromo, flúor, alquilo, hidroxilo, alcoxi, alcoxialquilo, amino, alquilamino, carboxi, nitro, ciano, tiol, tioéter, imina, imida, amidina, guanidina, enamina, aminocarbonilo, acilamino, fosfonato, fosfina, tiocarbonilo, sulfinilo, sulfona, sulfonamida, cetona, aldehído, éster, urea, uretano, oxima, hidroxil amina, alcoxiamina, ariloxiamina, aralcoxiamina, N-óxido, hidrazina, hidrazida, hidrazona, azida, isocianato, isotiocianato, cianato, tiocianato, B(OH)₂, u O(alquil)aminocarbonilo;

en donde cuando un grupo, diferente a un grupo alquilo, se dice que está sustituido, es sustituido con cloro, iodo, bromo, flúor, alquilo, hidroxilo, alcoxi, alcoxialquilo, amino, alquilamino, carboxi, nitro, ciano, tiol, tioéter, imina, imida, amidina, guanidina, enamina, aminocarbonilo, acilamino, fosfonato, fosfina, tiocarbonilo, sulfinilo, sulfona, sulfonamida, cetona, aldehído, éster, urea, uretano, oxima, hidroxil amina, alcoxiamina, ariloxiamina, aralcoxiamina, N-óxido, hidrazina, hidrazida, hidrazona, azida, isocianato, isotiocianato, cianato, tiocianato, oxígeno (=O), B(OH)₂, O(alquil)aminocarbonilo, cicloalquilo, heterociclilo, arilo, heteroarilo, ariloxi, aralquilo, heterociclilo, heterociclilo alcoxi.

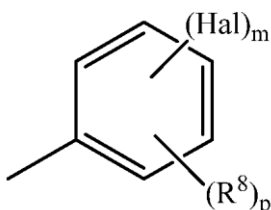
2. El compuesto de conformidad con la reivindicación 1, caracterizado porque R¹ es alquilo de C₁₋₈ sustituido o no sustituido.
3. El compuesto de conformidad con la reivindicación 2, caracterizado porque R¹ es metilo, etilo, n-propilo, isopropilo, n-butilo, sec-butilo, isobutilo, ter-butilo, n-pentilo, 2-metilpentilo, 3-metilpentilo, isopentilo, o neopentilo.
4. El compuesto de conformidad con la reivindicación 2, caracterizado porque R¹ se sustituye con uno o más sustituyentes independientemente seleccionados de halógeno y OR, en donde cada R es independientemente H o alquilo de C₁₋₃ sustituido o no sustituido.
5. El compuesto de conformidad con la reivindicación 2, caracterizado porque R¹ se sustituye con uno o más sustituyentes independientemente seleccionados de F, OH, y OCH₃.
6. El compuesto de conformidad con la reivindicación 2, caracterizado porque R¹ es etilo, isopropilo, isobutilo, ter-butilo, CH₂CH₂F, CH₂CHF₂, CH₂CF₃, CH₂CH(CH₃)OH, CH₂CH(CH₃)OCH₃, CH(CH₃)CH₂OH, CH(CH₃)CH₂OCH₃, CH₂C(F₂)CH₂OH, CH₂C(F₂)CH₂OCH₃, CH(CF₃)CH₂OH, CH(CF₃)CH₂OCH₃, CH(CH₂OH)CH₂CH₃, CH(CH₂OCH₃)CH₂CH₃, CH₂C(CH₃)₂CH₂OH, o CH₂C(CH₃)₂CH₂OCH₃.

7. El compuesto de conformidad con la reivindicación 2, caracterizado porque R¹ es isopropilo, isobutilo, ter-butilo, CH₂CF₃, CH₂CH(CH₃)OH, CH(CH₃)CH₂OH, CH(CH₃)CH₂OCH₃, CH₂C(F₂)CH₂OH, CH(CF₃)CH₂OH, CH(CH₂OH)CH₂CH₃, o CH₂C(CH₃)₂CH₂OH.
8. El compuesto de conformidad con la reivindicación 1, caracterizado porque R¹ es cicloalquilo sustituido o no sustituido.
9. El compuesto de conformidad con la reivindicación 8, caracterizado porque R¹ es ciclopropilo, ciclobutilo, ciclopentilo, ciclohexilo, o cicloheptilo sustituido o no sustituido.
10. El compuesto de conformidad con la reivindicación 8, caracterizado porque R¹ se sustituye con uno o más sustituyentes independientemente seleccionados de halógeno, OR, SO₂R', alquilo de C₁₋₃ sustituido o no sustituido, y heterociclilo sustituido o no sustituido, en donde cada R es independientemente H o alquilo de C₁₋₃ sustituido o no sustituido, y cada R' es independientemente alquilo de C₁₋₃ sustituido o no sustituido.
11. El compuesto de conformidad con la reivindicación 8, caracterizado porque R¹ se sustituye con uno o más sustituyentes independientemente seleccionados de F, OH, OCH₃, SO₂CH₃, metilo y heterociclilo de 5 miembros sustituido o no sustituido.
12. El compuesto de conformidad con la reivindicación 11, caracterizado porque el heterociclilo de 5 miembros es pirroldindionilo u oxadiazolilo.
13. El compuesto de conformidad con la reivindicación 8, caracterizado porque R¹ es ciclobutilo, ciclopentilo, ciclohexilo o cicloheptilo, opcionalmente sustituido con uno o más sustituyentes independientemente seleccionados de F, OH, OCH₃, SO₂CH₃, metilo, pirrolidindionilo y oxadiazolilo.
14. El compuesto de conformidad con la reivindicación 1, caracterizado porque R¹ es cicloalquilalquilo sustituido o no sustituido.
15. El compuesto de conformidad con la reivindicación 14, caracterizado porque R¹ es (alquilo de C₁₋₃)-(cicloalquilo de C₁₋₈).
16. El compuesto de conformidad con la reivindicación 14, caracterizado porque R¹ es CH₂-ciclopropilo, CH₂-ciclobutilo, CH₂-ciclopentilo, CH₂-ciclohexilo o CH₂-cicloheptilo sustituido o no sustituido.
17. El compuesto de conformidad con la reivindicación 14, caracterizado porque R¹ se sustituye con uno o más sustituyentes independientemente seleccionados de (alquilo de C₁₋₃)OR u OR, en donde cada R es independientemente H o alquilo de C₁₋₃ sustituido o no sustituido.
18. El compuesto de conformidad con la reivindicación 14, caracterizado porque R¹ es CH₂-ciclopropilo, CH₂-ciclobutilo, CH₂-ciclopentilo, o CH₂-ciclohexilo, opcionalmente sustituido con uno o más de CH₂OH u OH.

19. El compuesto de conformidad con la reivindicación 1, caracterizado porque R¹ es heterociclilo no aromático sustituido o no sustituido.
20. El compuesto de conformidad con la reivindicación 19, caracterizado porque R¹ es oxetanilo sustituido o no sustituido, tetrahidrofuranilo, tetrahidropiranilo, tetrahidro-tiopirandióxido, piperidilo, oxepanilo u oxaespiroheptilo.
21. El compuesto de conformidad con la reivindicación 19, caracterizado porque R¹ se sustituye con uno o más sustituyentes independientemente seleccionados de halógeno, OR, SO₂R⁴, C(=O)R⁵, C(=O)OR⁶, C(=O)NRR⁷, alquilo de C₁₋₃ sustituido o no sustituido, arilo sustituido o no sustituido, heteroarilo sustituido o no sustituido, o alquilarilo sustituido o no sustituido, en donde cada R es independientemente H o alquilo de C₁₋₃ sustituido o no sustituido; R⁴ es alquilo de C₁₋₃ sustituido o no sustituido, o arilo sustituido o no sustituido; R⁵ es alquilo de C₁₋₃ sustituido o no sustituido; R⁶ es alquilo de C₁₋₆ sustituido o no sustituido; y R⁷ es alquilo de C₁₋₃ sustituido o no sustituido, o arilo sustituido o no sustituido.
22. El compuesto de conformidad con la reivindicación 19, caracterizado porque R¹ es oxetanilo, tetrahidrofuranilo, tetrahidropiranilo, tetrahidro-tiopirandióxido, piperidilo, oxepanilo u oxaespiroheptilo, opcionalmente sustituido con uno o más sustituyentes independientemente seleccionados de F, OH, SO₂CH₃, SO₂-tosilo, C(=O)CH₃, C(=O)OCH₃, C(=O)O-ter-butilo, C(=O)O-isopropilo, C(=O)NHCH₃, C(=O)NH-fenilo, metilo, etilo, isopropilo, CH₂OH, fenilo, piridilo, o bencilo.
23. El compuesto de conformidad con la reivindicación 1, caracterizado porque R² es H.
24. El compuesto de conformidad con la reivindicación 1, caracterizado porque R² es CH₃.
25. El compuesto de conformidad con la reivindicación 1, caracterizado porque R³ es fenilo de orto-halógeno sustituido.
26. El compuesto de conformidad con la reivindicación 1, caracterizado porque R³ es fenilo de para-halógeno sustituido.
27. El compuesto de conformidad con la reivindicación 1, caracterizado porque R³ es fenilo de para-CN sustituido.
28. El compuesto de conformidad con la reivindicación 1, caracterizado porque R³ es orto, fenilo de orto-dihalógeno sustituido.
29. El compuesto de conformidad con la reivindicación 1, caracterizado porque R³ es orto, fenilo de para-dihalógeno sustituido.
30. El compuesto de conformidad con la reivindicación 1, caracterizado porque R³ es fenilo de 2,4,6-trihalógeno sustituido.

31. El compuesto de conformidad con la reivindicación 1, caracterizado porque R³ es orto-halógeno, fenilo de para-CN sustituido.

32. El compuesto de conformidad con la reivindicación 1, caracterizado porque R³ es



caracterizado porque

cada Hal es independientemente halógeno;

cada R⁸ es independientemente alquilo de C₁₋₃ sustituido o no sustituido, CN u OR';

cada R' es independientemente alquilo de C₁₋₃ sustituido o no sustituido; m es 1-3; y p es 0-2.

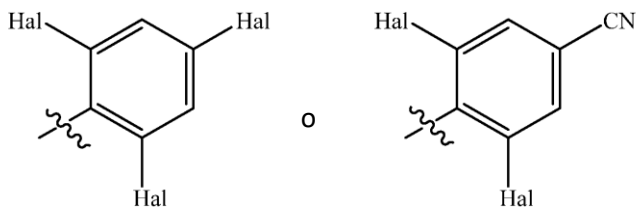
33. El compuesto de conformidad con la reivindicación 32, caracterizado porque cada Hal es independientemente Cl o F.

34. El compuesto de conformidad con la reivindicación 32, caracterizado porque cada R⁸ es independientemente CH₃, CF₃, CN u OCH₃.

35. El compuesto de conformidad con la reivindicación 32, caracterizado porque m es 2 o 3.

36. El compuesto de conformidad con la reivindicación 32, caracterizado porque p es 0 o 1.

37. El compuesto de conformidad con la reivindicación 32, en donde R³ es y cada Hal es independientemente halógeno.



38. El compuesto de conformidad con la reivindicación 37, caracterizado porque cada Hal es independientemente F o Cl.

39. El compuesto de conformidad con la reivindicación 1, caracterizado porque el compuesto se selecciona de la Tabla 1, y sales, tautómeros, estereoisómeros, enantiómeros e isopotólogos farmacéuticamente aceptables del mismo.

40. Una composición farmacéutica caracterizada porque comprende una cantidad efectiva de un compuesto de conformidad con la reivindicación 1 o reivindicación 39 y un portador farmacéuticamente aceptable, excipiente o vehículo.

41. Un método *in vitro* para inhibir una cinasa en una célula que expresa dicha cinasa, caracterizado porque comprende poner en contacto dicha célula con una cantidad efectiva de un compuesto de conformidad con la reivindicación 1 o reivindicación 39.

42. Un método *ex vivo* para inhibir una cinasa en una célula que expresa dicha cinasa, caracterizado porque comprende poner en contacto dicha célula con una cantidad efectiva de un compuesto de conformidad con la reivindicación 1 o reivindicación 39.