

## PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT																																								
NATURE OF CONVEYANCE:	ASSIGNMENT																																								
CONVEYING PARTY DATA																																									
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr><td>Roy L. Harris</td><td>08/02/2013</td></tr> <tr><td>John Sapienza</td><td>07/18/2013</td></tr> <tr><td>Graziella Shevlin</td><td>08/07/2013</td></tr> <tr><td>Patrick Papa</td><td>07/18/2013</td></tr> <tr><td>Branden Gingsee Lee</td><td>07/15/2013</td></tr> <tr><td>Garrick Packard</td><td>07/15/2013</td></tr> <tr><td>Jingjing Zhao</td><td>07/18/2013</td></tr> <tr><td>Patrick Anthony Jokiel</td><td>09/18/2013</td></tr> <tr><td>Deborah Mortensen</td><td>07/18/2013</td></tr> <tr><td>Jennifer Riggs</td><td>07/18/2013</td></tr> <tr><td>Juan Antonio Gamboa</td><td>07/22/2013</td></tr> <tr><td>Marie Georges Beauchamps</td><td>07/22/2013</td></tr> <tr><td>Matthew Michael Kreilein</td><td>07/22/2013</td></tr> <tr><td>Mohit Atul Kothare</td><td>07/22/2013</td></tr> <tr><td>Sophie Perrin-Ninkovic</td><td>08/02/2013</td></tr> <tr><td>Philip Pye</td><td>07/16/2013</td></tr> <tr><td>William Wei-Hwa Leong</td><td>07/22/2013</td></tr> <tr><td>Jan Elsner</td><td>07/18/2013</td></tr> <tr><td>Anusuya Choudhury</td><td>09/24/2013</td></tr> </tbody> </table>		Name	Execution Date	Roy L. Harris	08/02/2013	John Sapienza	07/18/2013	Graziella Shevlin	08/07/2013	Patrick Papa	07/18/2013	Branden Gingsee Lee	07/15/2013	Garrick Packard	07/15/2013	Jingjing Zhao	07/18/2013	Patrick Anthony Jokiel	09/18/2013	Deborah Mortensen	07/18/2013	Jennifer Riggs	07/18/2013	Juan Antonio Gamboa	07/22/2013	Marie Georges Beauchamps	07/22/2013	Matthew Michael Kreilein	07/22/2013	Mohit Atul Kothare	07/22/2013	Sophie Perrin-Ninkovic	08/02/2013	Philip Pye	07/16/2013	William Wei-Hwa Leong	07/22/2013	Jan Elsner	07/18/2013	Anusuya Choudhury	09/24/2013
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RECEIVING PARTY DATA																																									
Name:	Signal Pharmaceuticals LLC																																								
Street Address:	10300 Campus Point Drive																																								
Internal Address:	Suite 100																																								
City:	San Diego																																								
State/Country:	CALIFORNIA																																								
Postal Code:	92121																																								
PROPERTY NUMBERS Total: 1																																									

CH \$40.00 13873662

Property Type	Number
Application Number:	13873662

# CORRESPONDENCE DATA

Fax Number: 4045818330

*Correspondence will be sent via US Mail when the fax attempt is unsuccessful.*

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ATTORNEY DOCKET NUMBER:	10624-316-999
NAME OF SUBMITTER:	Michael J. Bruner
Signature:	/Michael J. Bruner/
Date:	09/24/2013
	This document serves as an Oath/Declaration (37 CFR 1.63).

# Total Attachments: 82

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40 ESSEX DRIVE, YARMOUTH, ME 04096

JOINT

# DECLARATION AND ASSIGNMENT

WHEREAS, WE, **ROY L. HARRIS**, a citizen of the United States of America, having a mailing address of 1075 Chalcedony St., Apt. A, San Diego, California, 92109, the United States of America residing at San Diego, California, the United States of America; **JOHN SAPIENZA**, a citizen of the United States of America, having a mailing address of 1654 Ridge Rock Court, Chula Vista, California 91913, the United States of America residing at Chula Vista, California, the United States of America; **GRAZIELLA SHEVLIN**, a citizen of the United States of America, having a mailing address of Jiro'n Trujillo # 578, Magdalena del Mar, Lima, Peru residing at Lima, Peru; **PATRICK PAPA**, a citizen of the United States of America, having a mailing address of 5320 Forecastle Ct., Carlsbad, California, 92008, the United States of America residing at Carlsbad, California, the United States of America; **BRANDEN GINGSEE LEE**, a citizen of the United States of America, having a mailing address of 11363 Stable Glen Pl., San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **GARRICK PACKARD**, a citizen of the United States of America, having a mailing address of 4741 Grand Ave. S, Apt. 1, Minneapolis, Minnesota, 55419, the United States of America residing at Minneapolis, Minnesota, the United States of America; **JINGJING ZHAO**, a 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; **PATRICK ANTHONY JOKIEL**, a citizen of the United States of America, having a mailing address of 2 ~~Scarlet Oak Drive~~, Princeton, New Jersey 08540, the United States of America residing at Princeton, New Jersey, the United States of America; **DEBORAH MORTENSEN**, a citizen of the United States of America, having a mailing address of 4302 Lodi Court, San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **JENNIFER RIGGS**, a citizen of the United States of America, having a mailing address of 2136 Wales Drive, Cardiff, California, 92007, the United States of America residing at Cardiff, California, the United States of America; **JUAN ANTONIO GAMBOA**, a citizen of the United States of America, having a mailing address of 65 Morton St., # 5K, New York City, New York, 10014, the United States of America residing at New York City, New York, the United States of America; **MARIE GEORGES BEAUCHAMPS**, a citizen of the United States of America, having a mailing address of 171 Main Street, Apt. # 16, Madison, New Jersey, 07940, the United States of America residing at Madison, New Jersey, the United States of America; **MATTHEW MICHAEL KREILEIN**, a citizen of the United States of America, having a mailing address of 14307 Crystal Ridge Dr., Watchung, New Jersey 07069, the United States of America residing at Watchung, New Jersey, the United States of America; **MOHIT ATUL KOTHARE**, a citizen of India, having a mailing address of 46 Reinhart Way, Bridgewater, New Jersey 08807, the United States of America residing at Bridgewater New Jersey, the United States of America; **SOPHIE PERRIN-NINKOVIC**, a citizen of France, having a mailing address of 8902 Nottingham Place, La Jolla, California 92037, the United States of America residing at La Jolla, California, the United States of America; **PHILIP PYE**, a citizen of the United States of America, having a mailing address of Turnhoutsebaan 93, Kasterlee, 2460, Belgium residing at Kasterlee, Belgium; **WILLIAM WEI-HWA LEONG**, a citizen of the United States of America, having a mailing address of 342 Edgewood Avenue, Westfield, New Jersey 07090, the United States of America residing at Westfield, New Jersey, the United States of America; **JAN ELSNER**, a citizen of the United States of America, having a mailing address of 7597 Charmant Dr., #902, San Diego, California 92122, the United States of America residing at San Diego, California, the United States of America; and **ANUSUYA CHOUDHURY**, a citizen of India, having a mailing address of 131 Edwards Drive, Churchville, Pennsylvania 18966, the United States of America residing at Churchville, Pennsylvania, the United States of America; **ASSIGNORS**, are inventors of the invention in **METHODS OF SYNTHESIS AND PURIFICATION OF HETEROARYL COMPOUNDS**, for which we have executed an application for a Patent of the United States,

☒ which is identified by Jones Day Docket No.: 10624-316-999

☒ which was filed on: April 30, 2013, Application No. 13/873,662:

☐ 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.

As above-named inventors, each of us hereby declares that:

This declaration is directed to:

☒ The attached application,

OR

☐ United States Application Number or PCT international number filed on .

The above-identified application was made or authorized to be made by me.

I believe I am an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization to Permit Access to Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

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, California 92121, 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 application 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 _____, 2013	_____ <b>ROY L. HARRIS</b> L.S.
Date _____, 2013	_____ <b>JOHN SAPIENZA</b> L.S.
Date _____, 2013	_____ <b>GRAZIELLA SHEVLIN</b> L.S.
Date _____, 2013	_____ <b>PATRICK PAPA</b> L.S.
Date _____, 2013	_____ <b>BRANDEN GINGSEE LEE</b> L.S.
Date _____, 2013	_____ <b>GARRICK PACKARD</b> L.S.

Date _____, 2013	JINGJING ZHAO _____ L.S.
Date <u>18 SEPT.</u> , 2013	<i>Patrick Anthony Jokiel</i> PATRICK ANTHONY JOKIEL _____ L.S.
Date _____, 2013	DEBORAH MORTENSEN _____ L.S.
Date _____, 2013	JENNIFER RIGGS _____ L.S.
Date _____, 2013	JUAN ANTONIO GAMBOA _____ L.S.
Date _____, 2013	MARIE GEORGES BEAUCHAMPS _____ L.S.
Date _____, 2013	MATTHEW MICHAEL KREILEIN _____ L.S.
Date _____, 2013	MOHIT ATUL KOTHARE _____ L.S.
Date _____, 2013	SOPHIE PERRIN-NINKOVIC _____ L.S.
Date _____, 2013	PHILIP PYE _____ L.S.
Date _____, 2013	WILLIAM WEI-HWA LEONG _____ L.S.
Date _____, 2013	JAN ELSNER _____ L.S.
Date _____, 2013	ANUSUYA CHOUDHURY _____ L.S.

STATE OF CALIFORNIA

)

COUNTY OF

)

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ROY L. HARRIS**, 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)

STATE OF CALIFORNIA

)

COUNTY OF

)

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JOHN SAPIENZA**, 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)

STATE OF

)

COUNTY OF

)

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GRAZIELLA SHEVLIN**, 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.

WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)



STATE OF CALIFORNIA )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK PAPA**, 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)

\_\_\_\_\_  
STATE OF CALIFORNIA )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **BRANDEN GINGSEE LEE**, 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)

\_\_\_\_\_  
STATE OF CALIFORNIA )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GARRICK PACKARD**, 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)

\_\_\_\_\_

U.S. Application No. 13/873,662; Jones Day Docket No.: 10624-316-999

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, 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 \_\_\_\_\_ (Seal)

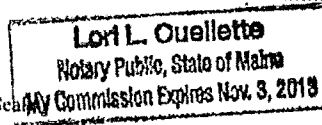
STATE OF ~~NEW JERSEY~~ **MAINE** )

COUNTY OF **ANDROSCOGGIN** )

On September 18, 2013 before me, Lori L. Ouellette, Notary Public, personally appeared **PATRICK ANTHONY JOKIEL**, 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 Lori L. Ouellette (Seal)



STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **DEBORAH MORTENSEN**, 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)

STATE OF CALIFORNIA )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JENNIFER RIGGS**, 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 NEW YORK )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JUAN ANTONIO GAMBOA**, 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 NEW JERSEY )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MARIE GEORGES BEAUCHAMPS**, 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 NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MATTHEW MICHAEL KREILEIN**, 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)

\_\_\_\_\_

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MOHIT ATUL KOTHARE**, 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)

\_\_\_\_\_

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **SOPHIE PERRIN-NINKOVIC**, 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)

\_\_\_\_\_

STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PHILIP PYE**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **WILLIAM WEI-HWA LEONG**, 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 )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JAN ELSNER**, 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)

---

STATE OF PENNSYLVANIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ANUSUYA CHOUDHURY**, 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)

ACCEPTED AND AGREED TO BY ASSIGNEE, **SIGNAL PHARMACEUTICALS, LLC**:

Signature \_\_\_\_\_

Date: \_\_\_\_\_

Printed name \_\_\_\_\_

Title \_\_\_\_\_

JOINT

# DECLARATION AND ASSIGNMENT

WHEREAS, WE, **ROY L. HARRIS**, a citizen of the United States of America, having a mailing address of 1075 Chalcedony St., Apt. A, San Diego, California, 92109, the United States of America residing at San Diego, California, the United States of America; **JOHN SAPIENZA**, a citizen of the United States of America, having a mailing address of 1654 Ridge Rock Court, Chula Vista, California 91913, the United States of America residing at Chula Vista, California, the United States of America; **GRAZIELLA SHEVLIN**, a citizen of the United States of America, having a mailing address of Jiro'n Trujillo # 578, Magdalena del Mar, Lima, Peru residing at Lima, Peru; **PATRICK PAPA**, a citizen of the United States of America, having a mailing address of 5320 Forecastle Ct., Carlsbad, California, 92008, the United States of America residing at Carlsbad, California, the United States of America; **BRANDEN GINGSEE LEE**, a citizen of the United States of America, having a mailing address of 11363 Stable Glen Pl., San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **GARRICK PACKARD**, a citizen of the United States of America, having a mailing address of 4741 Grand Ave. S, Apt. 1, Minneapolis, Minnesota, 55419, the United States of America residing at Minneapolis, Minnesota, the United States of America; **JINGJING ZHAO**, a 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; **PATRICK ANTHONY JOKIEL**, a citizen of the United States of America, having a mailing address of 2 Scarlet Oak Drive, Princeton, New Jersey 08540, the United States of America residing at Princeton, New Jersey, the United States of America; **DEBORAH MORTENSEN**, a citizen of the United States of America, having a mailing address of 4302 Lodi Court, San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **JENNIFER RIGGS**, a citizen of the United States of America, having a mailing address of 2136 Wales Drive, Cardiff, California, 92007, the United States of America residing at Cardiff, California, the United States of America; **JUAN ANTONIO GAMBOA**, a citizen of the United States of America, having a mailing address of 65 Morton St., # 5K, New York City, New York, 10014, the United States of America residing at New York City, New York, the United States of America; **MARIE GEORGES BEAUCHAMPS**, a citizen of the United States of America, having a mailing address of 171 Main Street, Apt. # 16, Madison, New Jersey, 07940, the United States of America residing at Madison, New Jersey, the United States of America; **MATTHEW MICHAEL KREILEIN**, a citizen of the United States of America, having a mailing address of 14307 Crystal Ridge Dr., Watchung, New Jersey 07069, the United States of America residing at Watchung, New Jersey, the United States of America; **MOHIT ATUL KOTHARE**, a citizen of India, having a mailing address of 46 Reinhart Way, Bridgewater, New Jersey 08807, the United States of America residing at Bridgewater New Jersey, the United States of America; **SOPHIE PERRIN-NINKOVIC**, a citizen of France, having a mailing address of 8902 Nottingham Place, La Jolla, California 92037, the United States of America residing at La Jolla, California, the United States of America; **PHILIP PYE**, a citizen of the United States of America, having a mailing address of Turnhoutsebaan 93, Kasterlee, 2460, Belgium residing at Kasterlee, Belgium; **WILLIAM WEI-HWA LEONG**, a citizen of the United States of America, having a mailing address of 342 Edgewood Avenue, Westfield, New Jersey 07090, the United States of America residing at Westfield, New Jersey, the United States of America; **JAN ELSNER**, a citizen of the United States of America, having a mailing address of 7597 Charmant Dr., #902, San Diego, California 92122, the United States of America residing at San Diego, California, the United States of America; and **ANUSUYA CHOUDHURY**, a citizen of India, having a mailing address of 131 Edwards Drive, Churchville, Pennsylvania 18966, the United States of America residing at Churchville, Pennsylvania, the United States of America; **ASSIGNORS**, are inventors of the invention in **METHODS OF SYNTHESIS AND PURIFICATION OF HETEROARYL COMPOUNDS**, for which we have executed an application for a Patent of the United States.

☒ which is identified by Jones Day Docket No.: 10624-316-999

☒ which was filed on: April 30, 2013. Application No. 13/873,662:

☐ 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.

As above-named inventors, each of us hereby declares that:

This declaration is directed to:

☒ The attached application,

OR

☐ United States Application Number or PCT international number filed on .

The above-identified application was made or authorized to be made by me.

I believe I am an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

## Authorization to Permit Access to Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

U.S. Application No. 13/873,662; Jones Day Docket No.: 10624-316-999

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

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, California 92121, 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 application 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;

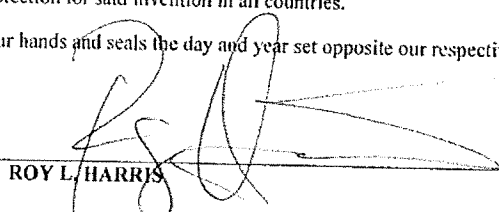
AND WE HEREBY authorize and request the Commissioner for Patents and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, 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 8/2/13, 2013

  
ROY L. HARRIS

L.S.

Date \_\_\_\_\_, 2013

JOHN SAPIENZA

L.S.

Date \_\_\_\_\_, 2013

GRAZIELLA SHEVLIN

L.S.

Date \_\_\_\_\_, 2013

PATRICK PAPA


L.S.

Date \_\_\_\_\_, 2013

BRANDEN GINGSEE LEE

L.S.

Date 07-15, 2013

  
GARRICK PACKARD

L.S.



Date _____, 2013	_____	L.S.
	<b>JINGJING ZHAO</b>	
Date _____, 2013	_____	L.S.
	<b>PATRICK ANTHONY JOKIEL</b>	
Date _____, 2013	_____	L.S.
	<b>DEBORAH MORTENSEN</b>	
Date _____, 2013	_____	L.S.
	<b>JENNIFER RIGGS</b>	
Date _____, 2013	_____	L.S.
	<b>JUAN ANTONIO GAMBOA</b>	
Date _____, 2013	_____	L.S.
	<b>MARIE GEORGES BEAUCHAMPS</b>	
Date _____, 2013	_____	L.S.
	<b>MATTHEW MICHAEL KREILEIN</b>	
Date _____, 2013	_____	L.S.
	<b>MOHIT ATUL KOTHARE</b>	
Date _____, 2013	_____	L.S.
	<b>SOPHIE PERRIN-NINKOVIC</b>	
Date _____, 2013	_____	L.S.
	<b>PHILIP PYE</b>	
Date _____, 2013	_____	L.S.
	<b>WILLIAM WEI-HWA LEONG</b>	
Date _____, 2013	_____	L.S.
	<b>JAN ELSNER</b>	
Date _____, 2013	_____	L.S.
	<b>ANUSUYA CHOUDHURY</b>	

STATE OF CALIFORNIA )

COUNTY OF SAN DIEGO )

On August 2, 2013 before me, SHOLITA PACKER, Notary Public, personally appeared ROY L. HARRIS, 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)



STATE OF CALIFORNIA )

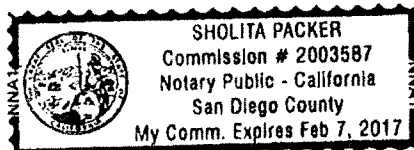
COUNTY OF San Diego )

On July 18, 2013 before me, SHOLITA PACKER, Notary Public, personally appeared JOHN SAPIENZA, 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)



STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_ Notary Public, personally appeared GRAZIELLA SHEVLIN, 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.

WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK PAPA**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **BRANDEN GINGSEE LEE**, 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)

STATE OF ~~CALIFORNIA~~ **WISCONSIN** )

COUNTY OF **DANE** )

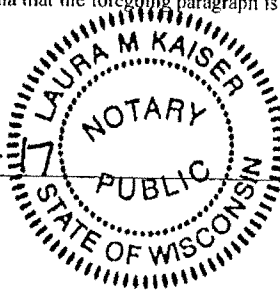
On **07-15-13** before me, **LAURA M. KAISER**, Notary Public, personally appeared **GARRICK PACKARD**, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their 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 **Laura M Kaiser** (Seal)

**my commission expires 06-02-17**



STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, 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\_\_\_\_\_ (Seal)  
\_\_\_\_\_

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK ANTHONY JOKIEL**, 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)  
\_\_\_\_\_

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **DEBORAH MORTENSEN**, 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)  
\_\_\_\_\_

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JENNIFER RIGGS**, 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)

---

STATE OF NEW YORK )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JUAN ANTONIO GAMBOA**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MARIE GEORGES BEAUCHAMPS**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MATTHEW MICHAEL KREILEIN**, 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 NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MOHIT ATUL KOTHARE**, 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)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **SOPHIE PERRIN-NINKOVIC**, 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)

---

STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PHILIP PYE**, 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 NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **WILLIAM WEI-HWA LEONG**, 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)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JAN ELSNER**, 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)

---

STATE OF PENNSYLVANIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ANUSUYA CHOUDHURY**, 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)

\_\_\_\_\_

ACCEPTED AND AGREED TO BY ASSIGNEE, **SIGNAL PHARMACEUTICALS, LLC**:

Signature \_\_\_\_\_

Date: \_\_\_\_\_

Printed name \_\_\_\_\_

Title \_\_\_\_\_



## DECLARATION AND ASSIGNMENT

WHEREAS, WE, **ROY L. HARRIS**, a citizen of the United States of America, having a mailing address of 1075 Chalcedony St., Apt. A, San Diego, California, 92109, the United States of America residing at San Diego, California, the United States of America; **JOHN SAPIENZA**, a citizen of the United States of America, having a mailing address of 1654 Ridge Rock Court, Chula Vista, California 91913, the United States of America residing at Chula Vista, California, the United States of America; **GRAZIELLA SHEVLIN**, a citizen of the United States of America, having a mailing address of Jiro'n Trujillo # 578, Magdalena del Mar, Lima, Peru residing at Lima, Peru; **PATRICK PAPA**, a citizen of the United States of America, having a mailing address of 5320 Forecastle Ct., Carlsbad, California, 92008, the United States of America residing at Carlsbad, California, the United States of America; **BRANDEN GINGSEE LEE**, a citizen of the United States of America, having a mailing address of 11363 Stable Glen Pl., San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **GARRICK PACKARD**, a citizen of the United States of America, having a mailing address of 4741 Grand Ave. S, Apt. 1, Minneapolis, Minnesota, 55419, the United States of America residing at Minneapolis, Minnesota, the United States of America; **JINGJING ZHAO**, a 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; **PATRICK ANTHONY JOKIEL**, a citizen of the United States of America, having a mailing address of 2 Scarlet Oak Drive, Princeton, New Jersey 08540, the United States of America residing at Princeton, New Jersey, the United States of America; **DEBORAH MORTENSEN**, a citizen of the United States of America, having a mailing address of 4302 Lodi Court, San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **JENNIFER RIGGS**, a citizen of the United States of America, having a mailing address of 2136 Wales Drive, Cardiff, California, 92007, the United States of America residing at Cardiff, California, the United States of America; **JUAN ANTONIO GAMBOA**, a citizen of the United States of America, having a mailing address of 65 Morton St., # 5K, New York City, New York, 10014, the United States of America residing at New York City, New York, the United States of America; **MARIE GEORGES BEAUCHAMPS**, a citizen of the United States of America, having a mailing address of 171 Main Street, Apt. # 16, Madison, New Jersey, 07940, the United States of America residing at Madison, New Jersey, the United States of America; **MATTHEW MICHAEL KREILEIN**, a citizen of the United States of America, having a mailing address of 14307 Crystal Ridge Dr., Watchung, New Jersey 07069, the United States of America residing at Watchung, New Jersey, the United States of America; **MOHIT ATUL KOTHARE**, a citizen of India, having a mailing address of 46 Reinhart Way, Bridgewater, New Jersey 08807, the United States of America residing at Bridgewater New Jersey, the United States of America; **SOPHIE PERRIN-NINKOVIC**, a citizen of France, having a mailing address of 8902 Nottingham Place, La Jolla, California 92037, the United States of America residing at La Jolla, California, the United States of America; **PHILIP PYE**, a citizen of the United States of America, having a mailing address of Turnhoutsebaan 93, Kasterlee, 2460, Belgium residing at Kasterlee, Belgium; **WILLIAM WEI-HWA LEONG**, a citizen of the United States of America, having a mailing address of 342 Edgewood Avenue, Westfield, New Jersey 07090, the United States of America residing at Westfield, New Jersey, the United States of America; **JAN ELSNER**, a citizen of the United States of America, having a mailing address of 7597 Charmant Dr., #902, San Diego, California 92122, the United States of America residing at San Diego, California, the United States of America; and **ANUSUYA CHOUDHURY**, a citizen of India, having a mailing address of 131 Edwards Drive, Churchville, Pennsylvania 18966, the United States of America residing at Churchville, Pennsylvania, the United States of America; ASSIGNORS, are inventors of the invention in **METHODS OF SYNTHESIS AND PURIFICATION OF HETEROARYL COMPOUNDS**, for which we have executed an application for a Patent of the United States,

☒ which is identified by Jones Day Docket No.: 10624-316-999

☒ which was filed on: April 30, 2013, Application No. 13/873,662:

☐ 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.

As above-named inventors, each of us hereby declares that:

This declaration is directed to:

☒ The attached application,

OR

☐ United States Application Number or PCT international number filed on .

The above-identified application was made or authorized to be made by me.

I believe I am an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization to Permit Access to Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

U.S. Application No. 13/873,662; Jones Day Docket No.: 10624-316-999

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

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, California 92121, 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 application 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 \_\_\_\_\_, 2013

ROY L. HARRIS

L.S.

Date July 18, 2013

JOHN SAPIENZA

L.S.

Date \_\_\_\_\_, 2013

GRAZIELLA SHEVLIN

L.S.

Date July 18, 2013

PATRICK PAPA

L.S.

Date July 15, 2013

BRANDEN GINGSEE LEE

L.S.

Date \_\_\_\_\_, 2013

GARRICK PACKARD

L.S.

Date _____, 2013	_____ L.S. <b>JINGJING ZHAO</b>
Date _____, 2013	_____ L.S. <b>PATRICK ANTHONY JOKIEL</b>
Date _____, 2013	_____ L.S. <b>DEBORAH MORTENSEN</b>
Date _____, 2013	_____ L.S. <b>JENNIFER RIGGS</b>
Date _____, 2013	_____ L.S. <b>JUAN ANTONIO GAMBOA</b>
Date _____, 2013	_____ L.S. <b>MARIE GEORGES BEAUCHAMPS</b>
Date _____, 2013	_____ L.S. <b>MATTHEW MICHAEL KREILEIN</b>
Date _____, 2013	_____ L.S. <b>MOHIT ATUL KOTHARE</b>
Date _____, 2013	_____ L.S. <b>SOPHIE PERRIN-NINKOVIC</b>
Date _____, 2013	_____ L.S. <b>PHILIP PYE</b>
Date _____, 2013	_____ L.S. <b>WILLIAM WEI-HWA LEONG</b>
Date _____, 2013	_____ L.S. <b>JAN ELSNER</b>
Date _____, 2013	_____ L.S. <b>ANUSUYA CHOUDHURY</b>

STATE OF CALIFORNIA )

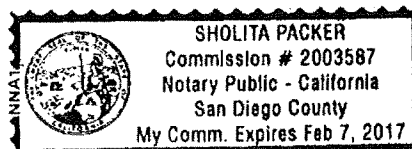
COUNTY OF SAN DIEGO )

On August 2, 2013 before me, SHOLITA PACKER, Notary Public, personally appeared ROY L. HARRIS, 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)



STATE OF CALIFORNIA )

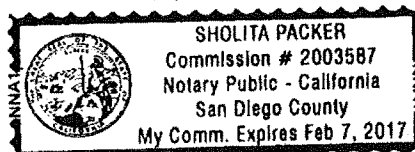
COUNTY OF San Diego )

On July 18, 2013 before me, SHOLITA PACKER, Notary Public, personally appeared JOHN SAPIENZA, 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)



STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared GRAZIELLA SHEVLIN, 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.

WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)

STATE OF CALIFORNIA )

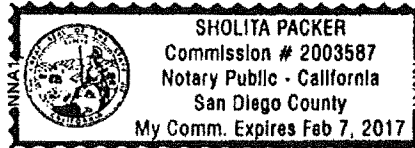
COUNTY OF San Diego )

On July 18, 2013 before me, SHOLITA PACKER, Notary Public, personally appeared **PATRICK PAPA**, 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)



STATE OF CALIFORNIA )

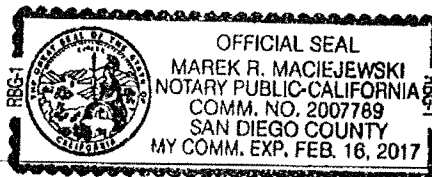
COUNTY OF )

On July 15<sup>th</sup> 2013 before me, Marek Maciejewski, Notary Public, personally appeared **BRANDEN GINGSEE LEE**, 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 *Marek Maciejewski* (Seal)



STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GARRICK PACKARD**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, 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\_\_\_\_\_ (Seal)  
\_\_\_\_\_

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK ANTHONY JOKIEL**, 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)  
\_\_\_\_\_

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **DEBORAH MORTENSEN**, 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)  
\_\_\_\_\_

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JENNIFER RIGGS**, 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)

---

STATE OF NEW YORK )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JUAN ANTONIO GAMBOA**, 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 NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MARIE GEORGES BEAUCHAMPS**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MATTHEW MICHAEL KREILEIN**, 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 NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MOHIT ATUL KOTHARE**, 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 )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **SOPHIE PERRIN-NINKOVIC**, 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)

---



STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PHILIP PYE**, 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 NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **WILLIAM WEI-HWA LEONG**, 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 )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JAN ELSNER**, 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)

---

STATE OF PENNSYLVANIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ANUSUYA CHOUDHURY**, 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)  
\_\_\_\_\_

ACCEPTED AND AGREED TO BY ASSIGNEE, **SIGNAL PHARMACEUTICALS, LLC**:

Signature\_\_\_\_\_ Date:\_\_\_\_\_

Printed name\_\_\_\_\_

Title\_\_\_\_\_

## DECLARATION AND ASSIGNMENT

WHEREAS, WE, **ROY L. HARRIS**, a citizen of the United States of America, having a mailing address of 1075 Chalcedony St., Apt. A, San Diego, California, 92109, the United States of America residing at San Diego, California, the United States of America; **JOHN SAPIENZA**, a citizen of the United States of America, having a mailing address of 1654 Ridge Rock Court, Chula Vista, California 91913, the United States of America residing at Chula Vista, California, the United States of America; **GRAZIELLA SHEVLIN**, a citizen of the United States of America, having a mailing address of Jiro'n Trujillo # 578, Magdalena del Mar, Lima, Peru residing at Lima, Peru; **PATRICK PAPA**, a citizen of the United States of America, having a mailing address of 5320 Forecastle Ct., Carlsbad, California, 92008, the United States of America residing at Carlsbad, California, the United States of America; **BRANDEN GINGSEE LEE**, a citizen of the United States of America, having a mailing address of 11363 Stable Glen Pl., San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **GARRICK PACKARD**, a citizen of the United States of America, having a mailing address of 4741 Grand Ave. S, Apt. 1, Minneapolis, Minnesota, 55419, the United States of America residing at Minneapolis, Minnesota, the United States of America; **JINGJING ZHAO**, a 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; **PATRICK ANTHONY JOKIEL**, a citizen of the United States of America, having a mailing address of 2 Scarlet Oak Drive, Princeton, New Jersey 08540, the United States of America residing at Princeton, New Jersey, the United States of America; **DEBORAH MORTENSEN**, a citizen of the United States of America, having a mailing address of 4302 Lodi Court, San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **JENNIFER RIGGS**, a citizen of the United States of America, having a mailing address of 2136 Wales Drive, Cardiff, California, 92007, the United States of America residing at Cardiff, California, the United States of America; **JUAN ANTONIO GAMBOA**, a citizen of the United States of America, having a mailing address of 65 Morton St., # 5K, New York City, New York, 10014, the United States of America residing at New York City, New York, the United States of America; **MARIE GEORGES BEAUCHAMPS**, a citizen of the United States of America, having a mailing address of 171 Main Street, Apt. # 16, Madison, New Jersey, 07940, the United States of America residing at Madison, New Jersey, the United States of America; **MATTHEW MICHAEL KREILEIN**, a citizen of the United States of America, having a mailing address of 14307 Crystal Ridge Dr., Watchung, New Jersey 07069, the United States of America residing at Watchung, New Jersey, the United States of America; **MOHIT ATUL KOTHARE**, a citizen of India, having a mailing address of 46 Reinhart Way, Bridgewater, New Jersey 08807, the United States of America residing at Bridgewater New Jersey, the United States of America; **SOPHIE PERRIN-NINKOVIC**, a citizen of France, having a mailing address of 8902 Nottingham Place, La Jolla, California 92037, the United States of America residing at La Jolla, California, the United States of America; **PHILIP PYE**, a citizen of the United States of America, having a mailing address of Turnhoutsebaan 93, Kasterlee, 2460, Belgium residing at Kasterlee, Belgium; **WILLIAM WEI-HWA LEONG**, a citizen of the United States of America, having a mailing address of 342 Edgewood Avenue, Westfield, New Jersey 07090, the United States of America residing at Westfield, New Jersey, the United States of America; **JAN ELSNER**, a citizen of the United States of America, having a mailing address of 7597 Charmant Dr., #902, San Diego, California 92122, the United States of America residing at San Diego, California, the United States of America; and **ANUSUYA CHOUDHURY**, a citizen of India, having a mailing address of 131 Edwards Drive, Churchville, Pennsylvania 18966, the United States of America residing at Churchville, Pennsylvania, the United States of America; ASSIGNORS, are inventors of the invention in **METHODS OF SYNTHESIS AND PURIFICATION OF HETEROARYL COMPOUNDS**, for which we have executed an application for a Patent of the United States,

☒ which is identified by Jones Day Docket No.: 10624-316-999

☒ which was filed on: April 30, 2013, Application No. 13/873,662:

☐ 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.

As above-named inventors, each of us hereby declares that:

This declaration is directed to:

☒ The attached application,

OR

☐ United States Application Number or PCT international number filed on .

The above-identified application was made or authorized to be made by me.

I believe I am an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization to Permit Access to Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

U.S. Application No. 13/873,662; Jones Day Docket No.: 10624-316-999

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

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, California 92121, 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 application 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 \_\_\_\_\_, 2013  
\_\_\_\_\_  
ROY L. HARRIS L.S.

Date \_\_\_\_\_, 2013  
\_\_\_\_\_  
JOHN SAPIENZA L.S.

Date Aug. 7, 2013  
\_\_\_\_\_  
GRAZIELLA SHEVLIN L.S.

Date \_\_\_\_\_, 2013  
\_\_\_\_\_  
PATRICK PAPA L.S.

Date \_\_\_\_\_, 2013  
\_\_\_\_\_  
BRANDEN GINGSEE LEE L.S.

Date \_\_\_\_\_, 2013  
\_\_\_\_\_  
GARRICK PACKARD L.S.

Date _____ , 2013	_____	L.S.
	<b>JINGJING ZHAO</b>	
Date _____ , 2013	_____	L.S.
	<b>PATRICK ANTHONY JOKIEL</b>	
Date _____ , 2013	_____	L.S.
	<b>DEBORAH MORTENSEN</b>	
Date _____ , 2013	_____	L.S.
	<b>JENNIFER RIGGS</b>	
Date _____ , 2013	_____	L.S.
	<b>JUAN ANTONIO GAMBOA</b>	
Date _____ , 2013	_____	L.S.
	<b>MARIE GEORGES BEAUCHAMPS</b>	
Date _____ , 2013	_____	L.S.
	<b>MATTHEW MICHAEL KREILEIN</b>	
Date _____ , 2013	_____	L.S.
	<b>MOHIT ATUL KOTHARE</b>	
Date _____ , 2013	_____	L.S.
	<b>SOPHIE PERRIN-NINKOVIC</b>	
Date _____ , 2013	_____	L.S.
	<b>PHILIP PYE</b>	
Date _____ , 2013	_____	L.S.
	<b>WILLIAM WEI-HWA LEONG</b>	
Date _____ , 2013	_____	L.S.
	<b>JAN ELSNER</b>	
Date _____ , 2013	_____	L.S.
	<b>ANUSUYA CHOUDHURY</b>	

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ROY L. HARRIS**, 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)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JOHN SAPIENZA**, 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)

---

STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GRAZIELLA SHEVLIN**, 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.

WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK PAPA**, 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)

\_\_\_\_\_  
STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **BRANDEN GINGSEE LEE**, 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)

\_\_\_\_\_  
STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GARRICK PACKARD**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, 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 \_\_\_\_\_ (Seal)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK ANTHONY JOKIEL**, 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)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **DEBORAH MORTENSEN**, 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 **JENNIFER RIGGS**, 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)

---

STATE OF NEW YORK )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JUAN ANTONIO GAMBOA**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MARIE GEORGES BEAUCHAMPS**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MATTHEW MICHAEL KREILEIN**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MOHIT ATUL KOTHARE**, 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)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **SOPHIE PERRIN-NINKOVIC**, 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)

---

STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PHILIP PYE**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **WILLIAM WEI-HWA LEONG**, 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)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JAN ELSNER**, 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)

---

STATE OF PENNSYLVANIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ANUSUYA CHOUDHURY**, 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)

---

ACCEPTED AND AGREED TO BY ASSIGNEE, **SIGNAL PHARMACEUTICALS, LLC**:

Signature \_\_\_\_\_

Date: \_\_\_\_\_

Printed name \_\_\_\_\_

Title \_\_\_\_\_

## DECLARATION AND ASSIGNMENT

WHEREAS, WE, **ROY L. HARRIS**, a citizen of the United States of America, having a mailing address of 1075 Chalcedony St., Apt. A, San Diego, California, 92109, the United States of America residing at San Diego, California, the United States of America; **JOHN SAPIENZA**, a citizen of the United States of America, having a mailing address of 1654 Ridge Rock Court, Chula Vista, California 91913, the United States of America residing at Chula Vista, California, the United States of America; **GRAZIELLA SHEVLIN**, a citizen of the United States of America, having a mailing address of Jiro'n Trujillo # 578, Magdalena del Mar, Lima, Peru residing at Lima, Peru; **PATRICK PAPA**, a citizen of the United States of America, having a mailing address of 5320 Forecastle Ct., Carlsbad, California, 92008, the United States of America residing at Carlsbad, California, the United States of America; **BRANDEN GINGSEE LEE**, a citizen of the United States of America, having a mailing address of 11363 Stable Glen Pl., San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **GARRICK PACKARD**, a citizen of the United States of America, having a mailing address of 4741 Grand Ave. S, Apt. 1, Minneapolis, Minnesota, 55419, the United States of America residing at Minneapolis, Minnesota, the United States of America; **JINGJING ZHAO**, a 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; **PATRICK ANTHONY JOKIEL**, a citizen of the United States of America, having a mailing address of 2 Scarlet Oak Drive, Princeton, New Jersey 08540, the United States of America residing at Princeton, New Jersey, the United States of America; **DEBORAH MORTENSEN**, a citizen of the United States of America, having a mailing address of 4302 Lodi Court, San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **JENNIFER RIGGS**, a citizen of the United States of America, having a mailing address of 2136 Wales Drive, Cardiff, California, 92007, the United States of America residing at Cardiff, California, the United States of America; **JUAN ANTONIO GAMBOA**, a citizen of the United States of America, having a mailing address of 65 Morton St., # 5K, New York City, New York, 10014, the United States of America residing at New York City, New York, the United States of America; **MARIE GEORGES BEAUCHAMPS**, a citizen of the United States of America, having a mailing address of 171 Main Street, Apt. # 16, Madison, New Jersey, 07940, the United States of America residing at Madison, New Jersey, the United States of America; **MATTHEW MICHAEL KREILEIN**, a citizen of the United States of America, having a mailing address of 14307 Crystal Ridge Dr., Watchung, New Jersey 07069, the United States of America residing at Watchung, New Jersey, the United States of America; **MOHIT ATUL KOTHARE**, a citizen of India, having a mailing address of 46 Reinhart Way, Bridgewater, New Jersey 08807, the United States of America residing at Bridgewater New Jersey, the United States of America; **SOPHIE PERRIN-NINKOVIC**, a citizen of France, having a mailing address of 8902 Nottingham Place, La Jolla, California 92037, the United States of America residing at La Jolla, California, the United States of America; **PHILIP PYE**, a citizen of the United States of America, having a mailing address of Turnhoutsebaan 93, Kasterlee, 2460, Belgium residing at Kasterlee, Belgium; **WILLIAM WEI-HWA LEONG**, a citizen of the United States of America, having a mailing address of 342 Edgewood Avenue, Westfield, New Jersey 07090, the United States of America residing at Westfield, New Jersey, the United States of America; **JAN ELSNER**, a citizen of the United States of America, having a mailing address of 7597 Charmant Dr., #902, San Diego, California 92122, the United States of America residing at San Diego, California, the United States of America; and **ANUSUYA CHOUDHURY**, a citizen of India, having a mailing address of 131 Edwards Drive, Churchville, Pennsylvania 18966, the United States of America residing at Churchville, Pennsylvania, the United States of America; ASSIGNORS, are inventors of the invention in **METHODS OF SYNTHESIS AND PURIFICATION OF HETEROARYL COMPOUNDS**, for which we have executed an application for a Patent of the United States,

☒ which is identified by Jones Day Docket No.: 10624-316-999

☒ which was filed on: April 30, 2013, Application No. 13/873,662:

☐ 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.

As above-named inventors, each of us hereby declares that:

This declaration is directed to:

☒ The attached application,

OR

☐ United States Application Number or PCT international number filed on .

The above-identified application was made or authorized to be made by me.

I believe I am an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization to Permit Access to Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed, 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

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, California 92121, 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 application 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 \_\_\_\_\_, 2013  
\_\_\_\_\_  
**ROY L. HARRIS** L.S.

Date \_\_\_\_\_, 2013  
\_\_\_\_\_  
**JOHN SAPIENZA** L.S.

Date \_\_\_\_\_, 2013  
\_\_\_\_\_  
**GRAZIELLA SHEVLIN** L.S.

Date \_\_\_\_\_, 2013  
\_\_\_\_\_  
**PATRICK PAPA** L.S.

Date \_\_\_\_\_, 2013  
\_\_\_\_\_  
**BRANDEN GINGSEE LEE** L.S.

Date \_\_\_\_\_, 2013  
\_\_\_\_\_  
**GARRICK PACKARD** L.S.

Date _____, 2013	_____ L.S.
	JINGJING ZHAO
Date _____, 2013	_____ L.S.
	PATRICK ANTHONY JOKIEL
Date _____, 2013	_____ L.S.
	DEBORAH MORTENSEN
Date _____, 2013	_____ L.S.
	JENNIFER RIGGS
Date <u>July 22</u> , 2013	_____ L.S.
	<u>Juan Antonio Gamboa</u> JUAN ANTONIO GAMBOA
Date _____, 2013	_____ L.S.
	MARIE GEORGES BEAUCHAMPS
Date _____, 2013	_____ L.S.
	MATTHEW MICHAEL KREILEIN
Date _____, 2013	_____ L.S.
	MOHIT ATUL KOTHARE
Date _____, 2013	_____ L.S.
	SOPHIE PERRIN-NINKOVIC
Date _____, 2013	_____ L.S.
	PHILIP PYE
Date _____, 2013	_____ L.S.
	WILLIAM WEI-HWA LEONG
Date _____, 2013	_____ L.S.
	JAN ELSNER
Date _____, 2013	_____ L.S.
	ANUSUYA CHOUDHURY

STATE OF CALIFORNIA )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ROY L. HARRIS**, 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)

---

STATE OF CALIFORNIA )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JOHN SAPIENZA**, 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 )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GRAZIELLA SHEVLIN**, 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.

WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)

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STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK PAPA**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **BRANDEN GINGSEE LEE**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GARRICK PACKARD**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, 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 \_\_\_\_\_ (Seal)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK ANTHONY JOKIEL**, 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)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **DEBORAH MORTENSEN**, 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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U.S. Application No. 13/873,662; Jones Day Docket No.: 10624-316-999

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared JENNIFER RIGGS, 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)

STATE OF ~~NEW YORK~~ New Jersey )

COUNTY OF Essex )

On July 22, 2013 before me, Ineice Inge, Notary Public, personally appeared JUAN ANTONIO GAMBOA, 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 Ineice Inge (Seal)

INEICE S. INGE  
ID # 2378059  
NOTARY PUBLIC OF NEW JERSEY  
Commission Expires 9/17/2013

STATE OF NEW JERSEY )

COUNTY OF )

On July 22, 2013 before me, Ineice Inge, Notary Public, personally appeared MARIE GEORGES BEAUCHAMPS, 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)

INEICE S. INGE  
ID # 2378059  
NOTARY PUBLIC OF NEW JERSEY  
Commission Expires 9/17/2013

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MATTHEW MICHAEL KREILEIN**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MOHIT ATUL KOTHARE**, 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 )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **SOPHIE PERRIN-NINKOVIC**, 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 )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PHILIP PYE**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **WILLIAM WEI-HWA LEONG**, 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)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JAN ELSNER**, 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 PENNSYLVANIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ANUSUYA CHOUDHURY**, 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)

ACCEPTED AND AGREED TO BY ASSIGNEE, **SIGNAL PHARMACEUTICALS, LLC**:

Signature \_\_\_\_\_

Date: \_\_\_\_\_

Printed name \_\_\_\_\_

Title \_\_\_\_\_

## DECLARATION AND ASSIGNMENT

WHEREAS, WE, **ROY L. HARRIS**, a citizen of the United States of America, having a mailing address of 1075 Chalcedony St., Apt. A, San Diego, California, 92109, the United States of America residing at San Diego, California, the United States of America; **JOHN SAPIENZA**, a citizen of the United States of America, having a mailing address of 1654 Ridge Rock Court, Chula Vista, California 91913, the United States of America residing at Chula Vista, California, the United States of America; **GRAZIELLA SHEVLIN**, a citizen of the United States of America, having a mailing address of Jiro'n Trujillo # 578, Magdalena del Mar, Lima, Peru residing at Lima, Peru; **PATRICK PAPA**, a citizen of the United States of America, having a mailing address of 5320 Forecastle Ct., Carlsbad, California, 92008, the United States of America residing at Carlsbad, California, the United States of America; **BRANDEN GINGSEE LEE**, a citizen of the United States of America, having a mailing address of 11363 Stable Glen Pl., San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **GARRICK PACKARD**, a citizen of the United States of America, having a mailing address of 4741 Grand Ave. S, Apt. 1, Minneapolis, Minnesota, 55419, the United States of America residing at Minneapolis, Minnesota, the United States of America; **JINGJING ZHAO**, a 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; **PATRICK ANTHONY JOKIEL**, a citizen of the United States of America, having a mailing address of 2 Scarlet Oak Drive, Princeton, New Jersey 08540, the United States of America residing at Princeton, New Jersey, the United States of America; **DEBORAH MORTENSEN**, a citizen of the United States of America, having a mailing address of 4302 Lodi Court, San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **JENNIFER RIGGS**, a citizen of the United States of America, having a mailing address of 2136 Wales Drive, Cardiff, California, 92007, the United States of America residing at Cardiff, California, the United States of America; **JUAN ANTONIO GAMBOA**, a citizen of the United States of America, having a mailing address of 65 Morton St., # 5K, New York City, New York, 10014, the United States of America residing at New York City, New York, the United States of America; **MARIE GEORGES BEAUCHAMPS**, a citizen of the United States of America, having a mailing address of 171 Main Street, Apt. # 16, Madison, New Jersey, 07940, the United States of America residing at Madison, New Jersey, the United States of America; **MATTHEW MICHAEL KREILEIN**, a citizen of the United States of America, having a mailing address of 14307 Crystal Ridge Dr., Watchung, New Jersey 07069, the United States of America residing at Watchung, New Jersey, the United States of America; **MOHIT ATUL KOTHARE**, a citizen of India, having a mailing address of 46 Reinhart Way, Bridgewater, New Jersey 08807, the United States of America residing at Bridgewater New Jersey, the United States of America; **SOPHIE PERRIN-NINKOVIC**, a citizen of France, having a mailing address of 8902 Nottingham Place, La Jolla, California 92037, the United States of America residing at La Jolla, California, the United States of America; **PHILIP PYE**, a citizen of the United States of America, having a mailing address of Turnhoutsebaan 93, Kasterlee, 2460, Belgium residing at Kasterlee, Belgium; **WILLIAM WEI-HWA LEONG**, a citizen of the United States of America, having a mailing address of 342 Edgewood Avenue, Westfield, New Jersey 07090, the United States of America residing at Westfield, New Jersey, the United States of America; **JAN ELSNER**, a citizen of the United States of America, having a mailing address of 7597 Charmant Dr., #902, San Diego, California 92122, the United States of America residing at San Diego, California, the United States of America; and **ANUSUYA CHOUDHURY**, a citizen of India, having a mailing address of 131 Edwards Drive, Churchville, Pennsylvania 18966, the United States of America residing at Churchville, Pennsylvania, the United States of America; ASSIGNORS, are inventors of the invention in **METHODS OF SYNTHESIS AND PURIFICATION OF HETEROARYL COMPOUNDS**, for which we have executed an application for a Patent of the United States,

☒ which is identified by Jones Day Docket No.: 10624-316-999

☒ which was filed on: April 30, 2013, Application No. 13/873,662:

☐ 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.

As above-named inventors, each of us hereby declares that:

This declaration is directed to:

☒ The attached application,

OR

☐ United States Application Number or PCT international number filed on .

The above-identified application was made or authorized to be made by me.

I believe I am an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization to Permit Access to Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

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, California 92121, 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 application 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 \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**ROY L. HARRIS**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**JOHN SAPIENZA**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**GRAZIELLA SHEVLIN**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**PATRICK PAPA**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**BRANDEN GINGSEE LEE**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**GARRICK PACKARD**



Date _____, 2013	_____	L.S.
	JINGJING ZHAO	
Date _____, 2013	_____	L.S.
	PATRICK ANTHONY JOKIEL	
Date _____, 2013	_____	L.S.
	DEBORAH MORTENSEN	
Date _____, 2013	_____	L.S.
	JENNIFER RIGGS	
Date _____, 2013	_____	L.S.
	JUAN ANTONIO GAMBOA	
Date <u>22 July</u> , 2013	<u>Marie Beauchamps</u>	L.S.
	MARIE GEORGES BEAUCHAMPS	
Date <u>22 July</u> , 2013	<u>Matthew M. Kreilein</u>	L.S.
	MATTHEW MICHAEL KREILEIN	
Date <u>22 July</u> , 2013	<u>M. Kothare</u>	L.S.
	MOHIT ATUL KOTHARE	
Date <u>01 Aug.</u> , 2013	<u>Sophie Perrin-Ninkovic</u>	L.S.
	SOPHIE PERRIN-NINKOVIC	
Date _____, 2013	_____	L.S.
	PHILIP PYE	
Date <u>22 July</u> , 2013	<u>William Wei-Hwa Leong</u>	L.S.
	WILLIAM WEI-HWA LEONG	
Date _____, 2013	_____	L.S.
	JAN ELSNER	
Date _____, 2013	_____	L.S.
	ANUSUYA CHOUDHURY	

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ROY L. HARRIS**, 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 **JOHN SAPIENZA**, 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)

---

STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GRAZIELLA SHEVLIN**, 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.

WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK PAPA**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **BRANDEN GINGSEE LEE**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GARRICK PACKARD**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, 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 \_\_\_\_\_ (Seal)

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STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK ANTHONY JOKIEL**, 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)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **DEBORAH MORTENSEN**, 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)

---

STATE OF CALIFORNIA )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared JENNIFER RIGGS, 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)

STATE OF ~~NEW YORK~~ New Jersey )  
COUNTY OF Essex )

On July 22, 2013 before me, Ineice Inge, Notary Public, personally appeared JUAN ANTONIO GAMBOA, 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 Ineice Inge (Seal)

**INEICE S. INGE**  
ID # 2370059  
NOTARY PUBLIC OF NEW JERSEY  
Commission Expires 9/17/2013

STATE OF NEW JERSEY )  
COUNTY OF )

On July 22, 2013 before me, Ineice Inge, Notary Public, personally appeared MARIE GEORGES BEAUCHAMPS, 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 Ineice Inge (Seal)

**INEICE S. INGE**  
ID # 2370059  
NOTARY PUBLIC OF NEW JERSEY  
Commission Expires 9/17/2013

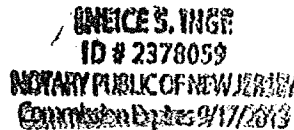
STATE OF NEW JERSEY )

COUNTY OF Essex )

On July 22 2013 before me, INEICE S. INGE, Notary Public, personally appeared **MATTHEW MICHAEL KREILEIN**, 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)



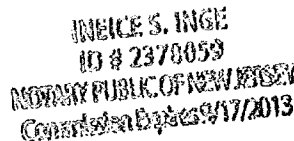
STATE OF NEW JERSEY )

COUNTY OF )

On July 22 2013 before me, INEICE S. INGE, Notary Public, personally appeared **MOHIT ATUL KOTHARE**, 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)



STATE OF CALIFORNIA )

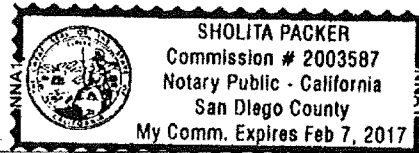
COUNTY OF SAN DIEGO )

On AUGUST 2, 2013 before me, SHOLITA PACKER, Notary Public, personally appeared **SOPHIE PERRIN-NINKOVIC**, 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)



STATE OF )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared PHILIP PYE, 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)

STATE OF NEW JERSEY )  
COUNTY OF Essex )

On July 22 2013 before me, Ineice Inge, Notary Public, personally appeared WILLIAM WEI-HWA LEONG, 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)

INEICE S. INGE  
ID # 2378059  
NOTARY PUBLIC OF NEW JERSEY  
Commission Expires 9/17/2013

STATE OF CALIFORNIA )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared JAN ELSNER, 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)

STATE OF PENNSYLVANIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ANUSUYA CHOUDHURY**, 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)  
\_\_\_\_\_

ACCEPTED AND AGREED TO BY ASSIGNEE, **SIGNAL PHARMACEUTICALS, LLC**:

Signature\_\_\_\_\_ Date:\_\_\_\_\_

Printed name\_\_\_\_\_

Title\_\_\_\_\_



## DECLARATION AND ASSIGNMENT

WHEREAS, WE, **ROY L. HARRIS**, a citizen of the United States of America, having a mailing address of 1075 Chalcedony St., Apt. A, San Diego, California, 92109, the United States of America residing at San Diego, California, the United States of America; **JOHN SAPIENZA**, a citizen of the United States of America, having a mailing address of 1654 Ridge Rock Court, Chula Vista, California 91913, the United States of America residing at Chula Vista, California, the United States of America; **GRAZIELLA SHEVLIN**, a citizen of the United States of America, having a mailing address of Jiro'n Trujillo # 578, Magdalena del Mar, Lima, Peru residing at Lima, Peru; **PATRICK PAPA**, a citizen of the United States of America, having a mailing address of 5320 Forecastle Ct., Carlsbad, California, 92008, the United States of America residing at Carlsbad, California, the United States of America; **BRANDEN GINGSEE LEE**, a citizen of the United States of America, having a mailing address of 11363 Stable Glen Pl., San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **GARRICK PACKARD**, a citizen of the United States of America, having a mailing address of 4741 Grand Ave. S, Apt. 1, Minneapolis, Minnesota, 55419, the United States of America residing at Minneapolis, Minnesota, the United States of America; **JINGJING ZHAO**, a 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; **PATRICK ANTHONY JOKIEL**, a citizen of the United States of America, having a mailing address of 2 Scarlet Oak Drive, Princeton, New Jersey 08540, the United States of America residing at Princeton, New Jersey, the United States of America; **DEBORAH MORTENSEN**, a citizen of the United States of America, having a mailing address of 4302 Lodi Court, San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **JENNIFER RIGGS**, a citizen of the United States of America, having a mailing address of 2136 Wales Drive, Cardiff, California, 92007, the United States of America residing at Cardiff, California, the United States of America; **JUAN ANTONIO GAMBOA**, a citizen of the United States of America, having a mailing address of 65 Morton St., # 5K, New York City, New York, 10014, the United States of America residing at New York City, New York, the United States of America; **MARIE GEORGES BEAUCHAMPS**, a citizen of the United States of America, having a mailing address of 171 Main Street, Apt. # 16, Madison, New Jersey, 07940, the United States of America residing at Madison, New Jersey, the United States of America; **MATTHEW MICHAEL KREILEIN**, a citizen of the United States of America, having a mailing address of 14307 Crystal Ridge Dr., Watchung, New Jersey 07069, the United States of America residing at Watchung, New Jersey, the United States of America; **MOHIT ATUL KOTHARE**, a citizen of India, having a mailing address of 46 Reinhart Way, Bridgewater, New Jersey 08807, the United States of America residing at Bridgewater New Jersey, the United States of America; **SOPHIE PERRIN-NINKOVIC**, a citizen of France, having a mailing address of 8902 Nottingham Place, La Jolla, California 92037, the United States of America residing at La Jolla, California, the United States of America; **PHILIP PYE**, a citizen of the United States of America, having a mailing address of Turnhoutsebaan 93, Kasterlee, 2460, Belgium residing at Kasterlee, Belgium; **WILLIAM WEI-HWA LEONG**, a citizen of the United States of America, having a mailing address of 342 Edgewood Avenue, Westfield, New Jersey 07090, the United States of America residing at Westfield, New Jersey, the United States of America; **JAN ELSNER**, a citizen of the United States of America, having a mailing address of 7597 Charmant Dr., #902, San Diego, California 92122, the United States of America residing at San Diego, California, the United States of America; and **ANUSUYA CHOUDHURY**, a citizen of India, having a mailing address of 131 Edwards Drive, Churchville, Pennsylvania 18966, the United States of America residing at Churchville, Pennsylvania, the United States of America; ASSIGNORS, are inventors of the invention in **METHODS OF SYNTHESIS AND PURIFICATION OF HETEROARYL COMPOUNDS**, for which we have executed an application for a Patent of the United States,

☒ which is identified by Jones Day Docket No.: 10624-316-999

☒ which was filed on: April 30, 2013, Application No. 13/873,662:

☐ 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.

As above-named inventors, each of us hereby declares that:

This declaration is directed to:

☒ The attached application,

OR

☐ United States Application Number or PCT international number filed on .

The above-identified application was made or authorized to be made by me.

I believe I am an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization to Permit Access to Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

U.S. Application No. 13/873,662; Jones Day Docket No.: 10624-316-999

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

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, California 92121, 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 application 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 \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**ROY L. HARRIS**



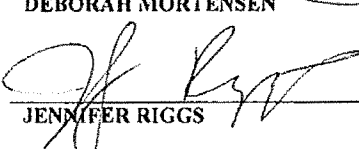

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**JOHN SAPIENZA**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**GRAZIELLA SHEVLIN**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**PATRICK PAPA**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**BRANDEN GINGSEE LEE**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**GARRICK PACKARD**

Date <u>7/18</u> , 2013	 JINGJING ZHAO	L.S.
Date _____, 2013	PATRICK ANTHONY JOKIEL	L.S.
Date <u>7/18</u> , 2013	 DEBORAH MORTENSEN	L.S.
Date <u>7/18</u> , 2013	 JENNIFER RIGGS	L.S.
Date _____, 2013	JUAN ANTONIO GAMBOA	L.S.
Date _____, 2013	MARIE GEORGES BEAUCHAMPS	L.S.
Date _____, 2013	MATTHEW MICHAEL KREILEIN	L.S.
Date _____, 2013	MOHIT ATUL KOTHARE	L.S.
Date _____, 2013	SOPHIE PERRIN-NINKOVIC	L.S.
Date _____, 2013	PHILIP PYE	L.S.
Date _____, 2013	WILLIAM WEI-HWA LEONG	L.S.
Date <u>7/18</u> , 2013	 JAN ELSNER	L.S.
Date _____, 2013	ANUSUYA CHOUDHURY	L.S.

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ROY L. HARRIS**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JOHN SAPIENZA**, 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)

STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GRAZIELLA SHEVLIN**, 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.

WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK PAPA**, 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)

\_\_\_\_\_  
STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **BRANDEN GINGSEE LEE**, 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)

\_\_\_\_\_  
STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GARRICK PACKARD**, 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)

STATE OF CALIFORNIA )

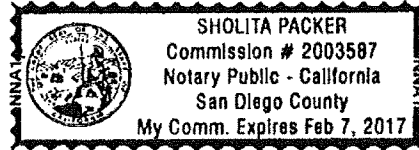
COUNTY OF San Diego )

On July 18, 2013 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 [Signature] (Seal)



STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared PATRICK ANTHONY JOKIEL, 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)

STATE OF CALIFORNIA )

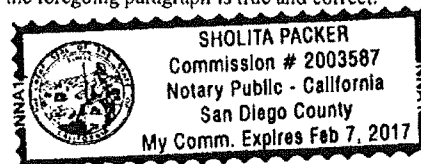
COUNTY OF San Diego )

On July 18, 2013 before me, SHOLITA PACKER, Notary Public, personally appeared DEBORAH MORTENSEN, 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)



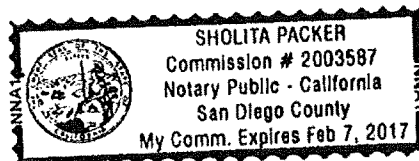
STATE OF CALIFORNIA )  
COUNTY OF SAN DIEGO )

On JULY 18, 2013 before me, SHOLITA PACKER, Notary Public, personally appeared JENNIFER RIGGS, 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)



STATE OF NEW YORK )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared JUAN ANTONIO GAMBOA, 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)

STATE OF NEW JERSEY )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared MARIE GEORGES BEAUCHAMPS, 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)

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MATTHEW MICHAEL KREILEIN**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MOHIT ATUL KOTHARE**, 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)

---

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **SOPHIE PERRIN-NINKOVIC**, 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)

---



U.S. Application No. 13/873,662; Jones Day Docket No.: 10624-316-999

STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PHILIP PYE**, 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)

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **WILLIAM WEI-HWA LEONG**, 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)

STATE OF CALIFORNIA )

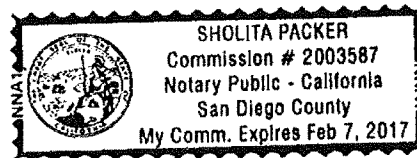
COUNTY OF SAN DIEGO )

On July 18, 2013 before me, SHOLITA PACKER, Notary Public, personally appeared **JAN ELSNER**, 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)



STATE OF PENNSYLVANIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ANUSUYA CHOUDHURY**, 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)  
\_\_\_\_\_

ACCEPTED AND AGREED TO BY ASSIGNEE, **SIGNAL PHARMACEUTICALS, LLC**:

Signature\_\_\_\_\_ Date:\_\_\_\_\_

Printed name\_\_\_\_\_

Title\_\_\_\_\_

## DECLARATION AND ASSIGNMENT

WHEREAS, WE, **ROY L. HARRIS**, a citizen of the United States of America, having a mailing address of 1075 Chalcedony St., Apt. A, San Diego, California, 92109, the United States of America residing at San Diego, California, the United States of America; **JOHN SAPIENZA**, a citizen of the United States of America, having a mailing address of 1654 Ridge Rock Court, Chula Vista, California 91913, the United States of America residing at Chula Vista, California, the United States of America; **GRAZIELLA SHEVLIN**, a citizen of the United States of America, having a mailing address of Jiro'n Trujillo # 578, Magdalena del Mar, Lima, Peru residing at Lima, Peru; **PATRICK PAPA**, a citizen of the United States of America, having a mailing address of 5320 Forecastle Ct., Carlsbad, California, 92008, the United States of America residing at Carlsbad, California, the United States of America; **BRANDEN GINGSEE LEE**, a citizen of the United States of America, having a mailing address of 11363 Stable Glen Pl., San Diego, California 92130, the United States of America residing at San Diego, California, the United States of America; **GARRICK PACKARD**, a citizen of the United States of America, having a mailing address of 4741 Grand Ave. S, Apt. 1, Minneapolis, Minnesota, 55419, the United States of America residing at Minneapolis, Minnesota, the United States of America; **JINGJING ZHAO**, a 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; **PATRICK ANTHONY JOKIEL**, a citizen of the United States of America, having a mailing address of 2 Scarlet Oak Drive, Princeton, New Jersey 08540, the United States of America residing at Princeton, New Jersey, the United States of America; **DEBORAH MORTENSEN**, a citizen of the United States of America, having a mailing address of 4302 Lodi Court, San Diego, California 92117, the United States of America residing at San Diego, California, the United States of America; **JENNIFER RIGGS**, a citizen of the United States of America, having a mailing address of 2136 Wales Drive, Cardiff, California, 92007, the United States of America residing at Cardiff, California, the United States of America; **JUAN ANTONIO GAMBOA**, a citizen of the United States of America, having a mailing address of 65 Morton St., # 5K, New York City, New York, 10014, the United States of America residing at New York City, New York, the United States of America; **MARIE GEORGES BEAUCHAMPS**, a citizen of the United States of America, having a mailing address of 171 Main Street, Apt. # 16, Madison, New Jersey, 07940, the United States of America residing at Madison, New Jersey, the United States of America; **MATTHEW MICHAEL KREILEIN**, a citizen of the United States of America, having a mailing address of 14307 Crystal Ridge Dr., Watchung, New Jersey 07069, the United States of America residing at Watchung, New Jersey, the United States of America; **MOHIT ATUL KOTHARE**, a citizen of India, having a mailing address of 46 Reinhart Way, Bridgewater, New Jersey 08807, the United States of America residing at Bridgewater New Jersey, the United States of America; **SOPHIE PERRIN-NINKOVIC**, a citizen of France, having a mailing address of 8902 Nottingham Place, La Jolla, California 92037, the United States of America residing at La Jolla, California, the United States of America; **PHILIP PYE**, a citizen of the United States of America, having a mailing address of Turnhoutsebaan 93, Kasterlee, 2460, Belgium residing at Kasterlee, Belgium; **WILLIAM WEI-HWA LEONG**, a citizen of the United States of America, having a mailing address of 342 Edgewood Avenue, Westfield, New Jersey 07090, the United States of America residing at Westfield, New Jersey, the United States of America; **JAN ELSNER**, a citizen of the United States of America, having a mailing address of 7597 Charmant Dr., #902, San Diego, California 92122, the United States of America residing at San Diego, California, the United States of America; and **ANUSUYA CHOUDHURY**, a citizen of India, having a mailing address of 131 Edwards Drive, Churchville, Pennsylvania 18966, the United States of America residing at Churchville, Pennsylvania, the United States of America; ASSIGNORS, are inventors of the invention in **METHODS OF SYNTHESIS AND PURIFICATION OF HETEROARYL COMPOUNDS**, for which we have executed an application for a Patent of the United States,

☒ which is identified by Jones Day Docket No.: 10624-316-999

☒ which was filed on: April 30, 2013, Application No. 13/873,662:

☐ 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.

As above-named inventors, each of us hereby declares that:

This declaration is directed to:

☒ The attached application,

OR

☐ United States Application Number or PCT international number filed on .

The above-identified application was made or authorized to be made by me.

I believe I am an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization to Permit Access to Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

U.S. Application No. 13/873,662; Jones Day Docket No.: 10624-316-999

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

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, California 92121, 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 application 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 \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**ROY L. HARRIS**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**JOHN SAPIENZA**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**GRAZIELLA SHEVLIN**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**PATRICK PAPA**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**BRANDEN GINGSEE LEE**

Date \_\_\_\_\_, 2013 \_\_\_\_\_ L.S.  
**GARRICK PACKARD**

Date _____, 2013	_____	L.S.
	JINGJING ZHAO	
Date _____, 2013	_____	L.S.
	PATRICK ANTHONY JOKIEL	
Date _____, 2013	_____	L.S.
	DEBORAH MORTENSEN	
Date _____, 2013	_____	L.S.
	JENNIFER RIGGS	
Date _____, 2013	_____	L.S.
	JUAN ANTONIO GAMBOA	
Date _____, 2013	_____	L.S.
	MARIE GEORGES BEAUCHAMPS	
Date _____, 2013	_____	L.S.
	MATTHEW MICHAEL KREILEIN	
Date _____, 2013	_____	L.S.
	MOHIT ATUL KOTHARE	
Date _____, 2013	_____	L.S.
	SOPHIE PERRIN-NINKOVIC	
Date <u>16 July</u> , 2013	<u>Philip Pye</u>	L.S.
	PHILIP PYE	
Date _____, 2013	_____	L.S.
	WILLIAM WEI-HWA LEONG	
Date _____, 2013	_____	L.S.
	JAN ELSNER	
Date _____, 2013	_____	L.S.
	ANUSUYA CHOUDHURY	

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **ROY L. HARRIS**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JOHN SAPIENZA**, 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)

STATE OF )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GRAZIELLA SHEVLIN**, 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.

WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK PAPA**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **BRANDEN GINGSEE LEE**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **GARRICK PACKARD**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, 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 \_\_\_\_\_ (Seal)

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PATRICK ANTHONY JOKIEL**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **DEBORAH MORTENSEN**, 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)



STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JENNIFER RIGGS**, 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)

---

STATE OF NEW YORK )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JUAN ANTONIO GAMBOA**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MARIE GEORGES BEAUCHAMPS**, 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)

---

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MATTHEW MICHAEL KREILEIN**, 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)

STATE OF NEW JERSEY )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **MOHIT ATUL KOTHARE**, 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)

STATE OF CALIFORNIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **SOPHIE PERRIN-NINKOVIC**, 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)

STATE OF )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **PHILIP PYE**, 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)  
\_\_\_\_\_

STATE OF NEW JERSEY )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **WILLIAM WEI-HWA LEONG**, 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)  
\_\_\_\_\_

STATE OF CALIFORNIA )  
COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared **JAN ELSNER**, 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)  
\_\_\_\_\_

U.S. Application No. 13/873,662; Jones Day Docket No.: 10624-316-999

STATE OF PENNSYLVANIA )

COUNTY OF )

On \_\_\_\_\_ before me, \_\_\_\_\_, Notary Public, personally appeared ANUSUYA CHOUDHURY, 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)

ACCEPTED AND AGREED TO BY ASSIGNEE, SIGNAL PHARMACEUTICALS, LLC:

Signature \_\_\_\_\_

Date: \_\_\_\_\_

Printed name \_\_\_\_\_

GREG REYES

Title \_\_\_\_\_

SR. VP Drug Discovery

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**SUBSTITUTE STATEMENT IN LIEU OF AN OATH OR DECLARATION FOR UTILITY  
OR DESIGN PATENT APPLICATION (35 U.S.C. 115(d) AND 37 CFR 1.64)**

Title of Invention	METHODS OF SYNTHESIS AND PURIFICATION OF HETEROARYL COMPOUNDS
-----------------------	---

This statement is directed to:

☐ The attached application,

OR

☒ United States application or PCT international application number 13/873,662 filed on April 30, 2013

**LEGAL NAME of inventor to whom this substitute statement applies:**

(E.g., Given Name (first and middle (if any)) and Family Name or Surname)

Anusuya Choudhury

Residence (except for a deceased or legally incapacitated inventor):

City Churchville	State Pennsylvania	Country USA
------------------	--------------------	-------------

Mailing Address (except for a deceased or legally incapacitated inventor):

131 Edwards Drive

City Churchville	State Pennsylvania	Zip 18966	Country USA
------------------	--------------------	-----------	-------------

I believe the above-named inventor or joint inventor to be the original inventor or an original joint inventor of a claimed invention in the application.

The above-identified application was made or authorized to be made by me.

I hereby acknowledge that any willful false statement made in this statement is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Relationship to the inventor to whom this substitute statement applies:

- ☐ Legal Representative (for deceased or legally incapacitated inventor only),  
☒ Assignee,  
☐ Person to whom the inventor is under an obligation to assign,  
☐ Person who otherwise shows a sufficient proprietary interest in the matter (petition under 37 CFR 1.46 is required), or  
☐ Joint Inventor.

[Page 1 of 2]

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**SUBSTITUTE STATEMENT**

Circumstances permitting execution of this substitute statement:

- ☐ Inventor is deceased,
- ☐ Inventor is under legal incapacity,
- ☒ Inventor cannot be found or reached after diligent effort, or
- ☐ Inventor has refused to execute the oath or declaration under 37 CFR 1.63.

If there are joint inventors, please check the appropriate box below:

- ☒ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) naming the entire inventive entity has been or is currently submitted.

OR

- ☐ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) has not been submitted. Thus, a Substitute Statement Supplemental Sheet (PTO/AIA/11 or equivalent) naming the entire inventive entity and providing inventor information is attached. See 37 CFR 1.64(b).

**WARNING:**

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

**PERSON EXECUTING THIS SUBSTITUTE STATEMENT:**Name: **Greg Reyes**

Date (Optional):

Signature: **APPLICANT NAME AND TITLE OF PERSON EXECUTING THIS SUBSTITUTE STATEMENT:**

If the applicant is a juristic entity, list the applicant name and the title of the signer:

Applicant Name: **Signal Pharmaceuticals, LLC**Title of Person Executing This Substitute Statement: **Senior Vice President Drug Discovery**

The signer, whose title is supplied above, is authorized to act on behalf of the applicant.

Residence of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent):

3762 1<sup>st</sup> AVE  
 City **SAN DIEGO** State **CA** Country **USA**

Mailing Address of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent)

**CELGENE**  
**10300 CAMPUS POINT DRIVE, Suite 100**

City **SAN DIEGO** State **CA** Zip **92121** Country **USA**

Note: Use an additional PTO/AIA/02 form for each inventor who is deceased, legally incapacitated, cannot be found or reached after diligent effort, or has refused to execute the oath or declaration under 37 CFR 1.63.