PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

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

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

REEL: 031270 FRAME: 0001

PATENT

Property Type	Number	
Application Number:	13873662	

CORRESPONDENCE DATA

Fax Number: 4045818330

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

Phone: (404) 581-8614

Email: mjbruner@jonesday.com

Correspondent Name: Michael J. Bruner

Address Line 1: 1420 Peachtree Street, NE

Address Line 2: Suite 800

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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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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, 22109, the United States of America, having a mailing address of 1548 Ridge Rock Court, Chula Vista, California 91913, the United States of America residing at Chula Vista, California, the United States of America, having a mailing address of 1548 Ridge Rock Court, Chula Vista, California 91913, United States of America, having a mailing address of 1548 Ridge Rock Court, Chula Vista, California, 164 PATRICK PAPA, a citizen of the United States of America, having a mailing address of 5320 Forecastle Cl., Carlsbad, California, 20008, the United States of America residing at Carlsbad, California, the United States of America, having a mailing address of 5320 Forecastle Cl., Carlsbad, California, 92008, United States of America, partial gamerica, having a mailing address of 1363 Stable Glen Pl., San Diego, California 92100, the United States of America, and Minnesota, 53419, the United States of America, and Minnesota, 5410, a citizen of the United States of America, and Minnesota, the United States of America, and Minnesota, the United States of America, and Minnesota, 5419, the United States of America residing at Minneapolis, Bryn Glen Way, San Diego, California 92129, the United States of America, and partica partical WHEREAS, WE, ROY L. HARRIS, a citizen of the United States of America, having a mailing address of 1075 Chalcedony St., mailing address of 8902 Nottingham Piace, 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, 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 ANUSUYA CHOUDHURY, a citizen of India, having a mailing address of 131 Edwards Drive, Churchville, Pennsylvania 18966, the Indied States of America residing at Churchville, Pennsylvania, the United States of America; ASSIGNORS, are inventors of the invention for a Patent of the United States

Mwhich 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, file, file) the filing date and application number of said application when known.	t
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	

Page 1 of 10

filed to have access to the above-identified patent application.

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 ontees in which a foreign application claiming priority 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

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 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 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 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, 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.

Page 2 of 10

Date			, 2013		
			, , , ,	JINGJING ZHAO	
Date _	18	SB?T,	, 2013	PATRICK ANTHONY JOKIEL PATRICK ANTHONY JOKIEL	The state of the s
Date _			, 2013	DEBORAH MORTENSEN	· North Control of the Control of th
Date			, 2013	JENNIFER RIGGS	1
Date			, 2013	JUAN ANTONIO GAMBOA	L
Date	-		, 2013	MARIE GEORGES BEAUCHAMPS	L.
ate			, 2013	MATTHEW MICHAEL KREILEIN	1
nte			, 2013	MOHIT ATUL KOTHARE	18
te	***************************************		, 2013	SOPHIE PERRIN-NINKOVIC	L.S.
e			, 2013	PHILIP PYE	L.s.
			, 2013	WILLIAM WEI-HWA LEONG	L.S.
	***************************************		,2013	JAN ELSNER	L.S.
			, 2013	ANUSUYA CHOUDHURY	

U.S. Application No. 13/873,662; Jon	ies Day Docket No : 10624 216 ago
STATE OF CALIFORNIA	5 = 50.00 P.O.: 10024-516-999
)
COUNTY OF)
	before me,
I certify under PENALTY OF PERJUR	Y under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.	and correct.
Signature	(Seal)
STATE OF CALIFORNIA)
COUNTY OF)
	before me,, Notary Public, personally appeared JOHN SAPIENZA , tisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the behalf of which the person(s) acted, executed the instrument. under the laws of the State of California that the foregoing paragraph is true and correct.
Signature	(Seal)
STATE OF)
COUNTY OF)
WITNESS my hand and official seal.	before me,, Notary Public, personally appeared GRAZIELLA cotted the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the person(s) acted, executed the instrument.
Signature	(Seal)

U.S. Application No. 13/873,662;	Jones Day Docket No.: 1062	4-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
Onwho proved to me on the basis acknowledged to me that he/she/instrument the person(s), or the entitle of the person of t	they executed the same in	his/her/their author	, Notary Public, personally appeared PATRICK PAPA , whose name(s) is/are subscribed to the within instrument and orized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
I certify under PENALTY OF PER	CJURY under the laws of the	State of California	that the foregoing paragraph is true and correct.
WITNESS my hand and official se	al.		
Signature		(Seal)	
STATE OF CALIFORNIA)	
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and acknowledged to me that he/s instrument the person(s), or the ent	she/they executed the same in ity upon behalf of which the part of the supplemental	in his/her/their auth person(s) acted, exc State of California	person(s) whose name(s) is/are subscribed to the within instrument norized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument. that the foregoing paragraph is true and correct.
STATE OF CALIFORNIA)	
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nstrument the person(s), or the enti	they executed the same in I ty upon behalf of which the p	nis/her/their author person(s) acted, exe	, Notary Public, personally appeared GARRICK on(s) whose name(s) is/are subscribed to the within instrument and ized capacity(ies), and that by his/her/their signature(s) on the cuted the instrument. that the foregoing paragraph is true and correct.
Signature		(Seal)	

U.S. Application No. 13/873,662; Jones Day Docket	No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
instrument the person(s), or the entity upon behalf of	which the person(s) acted, executed the	
I certify under PENALTY OF PERJURY under the law WITNESS my hand and official seal.	iws of the State of California that the fo	oregoing paragraph is true and correct.
With 1000 my haid aid Official Scal.		
Signature	(Seal)	
BA		
STATE OF NEW JERSEY MAINE)	
COUNTY OF ANDROSCOGGIN)	
On Superior 18 2013 before me ANTHONY JOKIEL, personally known to me on the instrument and acknowledged to me that he/she/they exon the instrument the person(s), or the entity upon behalf witness my hand and official scal. Signature	c basis of satisfactory evidence to be texecuted the same in his/her/their authorities of which the person(s) acted, executed the same in his/her/their authorities of which the person(s) acted, executed the same in his/her/their authorities of which the person(s) acted, executed the same in his/her/their authorities of the	rized capacity(tes), and that by his/her/their signature(sed the instrument.
STATE OF CALIFORNIA	,	
COUNTY OF)	
On before me, MORTENSEN, who proved to me on the basis of satis and acknowledged to me that he/she/they executed the instrument the person(s), or the entity upon behalf of wh	factory evidence to be the person(s) with same in his/her/their authorized caps ich the person(s) acted, executed the in	Notary Public, personally appeared DEBORAH nose name(s) is/are subscribed to the within instrument acity(ies), and that by his/her/their signature(s) on the istrument.
I certify under PENALTY OF PERJURY under the laws		
WITNESS my hand and official seal.		
Signature	(Seal)	

Page 6 of 10

U.S. Application No. 13/873,662; Jo	ones Day Docket No.: 10624-316	-999
STATE OF CALIFORNIA)
COUNTY OF)
who proved to me on the basis of acknowledged to me that he/she/th instrument the person(s), or the entity	icy executed the same in his/na	, Notary Public, personally appeared JENNIFER RIGGS , the person(s) whose name(s) is/are subscribed to the within instrument and er/their authorized capacity(ies), and that by his/her/their signature(s) on the n(s) acted, executed the instrument.
I certify under PENALTY OF PERJU	URY 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		
OnGAMBOA, personally known to me and acknowledged to me that he/she instrument the person(s), or the entity	they executed the same in his/	, Notary Public, personally appeared JUAN ANTONIO lence to be the person(s) whose name(s) is subscribed to the within instrument her/their authorized capacity(ies), and that by his/her/their signature(s) on the (s) acted, executed the instrument.
WITNESS my hand and official seal.		
Signature		Seal)
STATE OF NEW JERSEY)	
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instrument and acknowledged to me th	hat he/she/they executed the sam	, Notary Public, personally appeared MARIE GEORGES ory evidence to be the person(s) whose name(s) is subscribed to the within e in his/her/their authorized capacity(ies), and that by his/her/their signature(s) person(s) acted, executed the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)

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U.S. Application No. 13/873,662;	Jones Day Docket No.: 106	24-316-999	
STATE OF NEW JERSEY)	
COUNTY OF)	
On	the entity upon behalf of wh	the same in his/her/	, Notary Public, personally appeared MATTHEW ence to be the person(s) whose name(s) is subscribed to the within their authorized capacity(ies), and that by his/her/their signature(s) ted, executed the instrument.
Signature		(Seal)	
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STATE OF NEW JERSEY)	
COUNTY OF)	
On KOTHARE, personally known to and acknowledged to me that he/s instrument the person(s), or the ent	ity upon behalf of which the	in his/her/their auth	, Notary Public, personally appeared MOHIT ATUL ne person(s) whose name(s) is subscribed to the within instrument orized capacity(ies), and that by his/her/their signature(s) on the cuted the instrument.
Signature		(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
On	he/they executed the same i	in his/her/their autho	, Notary Public, personally appeared SOPHIE PERRIN -rson(s) whose name(s) is/are subscribed to the within instrument orized capacity(ies), and that by his/her/their signature(s) on the cuted the instrument.
I certify under PENALTY OF PERJ	JURY under the laws of the	State of California th	at the foregoing paragraph is true and correct.
WITNESS my hand and official sea	1.		
Signature		(Seal)	

U.S. Application No. 13/873,662;	Jones Day Docket No.: 10624-316-	999
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COUNTY OF		
acknowledged to me that he/she/	before me, basis of satisfactory evidence to lead the same in his/her tity upon behalf of which the person	, Notary Public, personally appeared PHILIP PYE , be the person(s) whose name(s) is subscribed to the within instrument and r/their authorized capacity(ies), and that by his/her/their signature(s) on the (s) acted, executed the instrument.
WITNESS my hand and official se	eal.	
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STATE OF NEW JERSEY)	
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STATE OF CALIFORNIA)	
COUNTY OF)	
me that he/she/they executed the sa	before me, actory evidence to be the person(s) was me in his/her/their authorized capache person(s) acted, executed the inst	, Notary Public, personally appeared JAN ELSNER , who whose name(s) is/are subscribed to the within instrument and acknowledged to city(ies), and that by his/her/their signature(s) on the instrument the person(s), trument.
certify under PENALTY OF PER.	JURY under the laws of the State of	California that the foregoing paragraph is true and correct.
WITNESS my hand and official sea	al.	
Signature	(2)	Seal)

U.S. Application No. 13/873,662; Jon	les Day Docket No.: 10624-316-999	
STATE OF PENNSYLVANIA)	
COUNTY OF)	
insulaniem and acknowledged to me t	before me, to me on the basis of satisfactory evidence hat he/she/they executed the same in his/her entity upon behalf of which the person(s) a	Notary Public, personally appeared ANUSUYA te to be the person(s) whose name(s) is subscribed to the within their authorized capacity(ies), and that by his/her/their signature(s) cted, executed the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)	
ACCEPTED AND AGREED TO BY	ASSIGNEE, SIGNAL PHARMACEUTIC	CALS, LLC:
Signature		Date:
Printed name		
itle		

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,

Iwhich is identified by Jones Day Docket No.: 10624-316-999	
Iwhich was filed on: April 30, 2013. Application No. 13/873,662:	
IWe hereby authorize and request attorney(s) at Jones Day, to insert here in parentheses (Application number,	filed
s 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 imprisonn of not more than five (5) years, or both.	nent

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, WIPO, 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 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(e), 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, V	We hereunto s	et our hands and seals the day and year set opposite our respective signatures.	
Date	8/2/13		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	JINGJING ZHAO	L.S.
Date	, 2013	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.

U.S. Application No. 13/873,662: Jones Day Docket No.	: 10624-316-999		
STATE OF CALIFORNIA)		
On August 2, 2013 before me, who proved to me on, the basis of satisfactory evider acknowledged to me that Rosenship executed the san instrument the person(s), or the entity upon behalf of which	hourth Ack	Notary Public, personally whose name(s) is/age subscribed orized capacity(jes), and that by feecuted the instrument.	y appeared ROY L. HARRI. to the within instrument are list the city of the contraction of
certify under PENALTY OF PERJURY under the laws of	-		and correct.
WITNESS my hand and official seal. Signature	(Seal)	SH Comm Notary Sa	HOLITA PACKER Alssion # 2003587 y Public - California In Diego County In Expires Feb 7, 2017
STATE OF CALIFORNIA)		
On July 1812013 hefore me, Statistically evidence acknowledged to me that he/she/they executed the same instrument the person(s), or the entity upon behalf of which I certify under PENALTY OF PERJURY under the laws of WITNESS my hand and official seal.	the person(x) acted, ex	couted the instrument. SHOLIT Commissio	and correct. A PACKER In # 2003587 Ilic - California
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U.S. Application No. 13/873,662; J	ones Day Docket No.: 106	24-316-999	
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		: State of California	a that the foregoing paragraph is true and correct.
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ertify under PENALTY OF PERJUI	RY under the laws of the St	tate of California th	nat the foregoing paragraph is true and correct.
TNESS my hand and official seal.			HAM KAJONI
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nstrument the person(s), or the entity upon beh) fore me,	nat by his/her/their signature(s) on the
On bet On bet MORTENSEN, who proved to me on the basi nd acknowledged to me that he/she/they exe nstrument the person(s), or the entity upon beh	fore me,, Notary Public is of satisfactory evidence to be the person(s) whose name(s) is/secuted the same in his/her/their authorized capacity(ies), and the half of which the person(s) acted, executed the instrument.	nat by his/her/their signature(s) on the
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COUNTY OF)	
STATE OF NEW JERSEY)	
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I certify under PENALTY OF PERJURY und	der the laws of the State of California that the foregoing paragrap	oh is true and correct.
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STATE OF CALIFORNIA COUNTY OF)	

U.S. Application No. 13/873,662; Jo	ones Day Docket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
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I certify under PENALTY OF PERJU	URY under the laws of the State of California th	nat the foregoing paragraph is true and correct.
WITNESS my hand and official seal.		
Signature	(Seal)	
STATE OF NEW YORK)	
COUNTY OF)	
and acknowledged to me that he/she	on the basis of satisfactory evidence to be the	, Notary Public, personally appeared JUAN ANTONIO person(s) whose name(s) is subscribed to the within instrument rized capacity(ies), and that by his/her/their signature(s) on the uted the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)	
STATE OF NEW JERSEY)	
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VITNESS my hand and official seal.		
ignature	(Seal)	

U.S. Application No. 13/873,662;	Jones Day Docket No.: 10624	-316-999	
STATE OF NEW JERSEY)	
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WITNESS my hand and official se	al.		
Signature		(Seal)	
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On	ity upon behalf of which the po	his/her/their aut	, Notary Public, personally appeared MOHIT ATUL the person(s) whose name(s) is subscribed to the within instrument horized capacity(ies), and that by his/her/their signature(s) on the secuted the instrument.
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STATE OF CALIFORNIA)	
COUNTY OF)	
On NINKOVIC, who proved to me on and acknowledged to me that he/sh instrument the person(s), or the entit	ne/they executed the same in	his/her/their autl	, Notary Public, personally appeared SOPHIE PERRIN - erson(s) whose name(s) is/are subscribed to the within instrument norized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
I certify under PENALTY OF PERJ	URY under the laws of the Sta	ate of California	that the foregoing paragraph is true and correct.
WITNESS my hand and official seal	ı.		
Signature		(Seal)	

U.S. Application No. 13/873,662;	Jones Day Docket No.: 106	24-316-999	
STATE OF)	
COUNTY OF)	
On	they executed the same ir	n his/her/their autho	, Notary Public, personally appeared PHILIP PYE , on(s) whose name(s) is subscribed to the within instrument and orized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
WITNESS my hand and official se	eal.		
Signature	***************************************	(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
On	the entity upon behalf of wh	the same in his/her/	Notary Public, personally appeared WILLIAM WEI- to be the person(s) whose name(s) is subscribed to the within their authorized capacity(ies), and that by his/her/their signature(s) ted, executed the instrument.
Signature		(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
On	ame in his/her/their authorize	ed capacity(ies), and	Notary Public, personally appeared JAN ELSNER , who s) is/are subscribed to the within instrument and acknowledged to that by his/her/their signature(s) on the instrument the person(s),
certify under PENALTY OF PER	JURY under the laws of the	State of California t	hat the foregoing paragraph is true and correct.
VITNESS my hand and official sea	al.		
ignature		(Seal)	

U.S. Application No. 13/873,662; Jo	nes Day Docket No.: 10624-316-999	
STATE OF PENNSYLVANIA)	
COUNTY OF)	
instrument and acknowledged to me	that he/she/they executed the same in his/he e entity upon behalf of which the person(s) a	, Notary Public, personally appeared ANUSUYA ce to be the person(s) whose name(s) is subscribed to the within r/their authorized capacity(ies), and that by his/her/their signature(s) acted, executed the instrument.
Signature		
ACCEPTED AND AGREED TO BY	/ ASSIGNEE, SIGNAL PHARMACEUTI	CALS, 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

Authorization to Permit Access to Application by Participating Office

of not more than five (5) years, or both.

☑ 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 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 _	Jy 18	_ ,2013	PATRICK PAPA	L.S.
Date	July 15,	_ , 2013	Branden GINGSEE LEE	L.S.
Date		_ , 2013	GARRICK PACKARD	L.S.

Date	, 2013	JINGJING ZHAO	L.S.
Date	, 2013	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	ANUSTIVA CHOUDHUDV	L.S.

U.S. Application No. 13/873,662: Jones Day Docket No.: I	0624-316-999			
STATE OF CALIFORNIA)			
On August 2, 2013 before me. Si who proved to me on the pass of satisfactory evidence	HOLITA PACE	- Ca. Notary Pul	blic, personally popeared RO	OV L. HARRI
who proved to me on the basis of satisfactory evidence acknowledged to me that he same instrument the personts, or the entity upon behalf of which	in Mcharthair au	porized capacity/last	and that her EDE date of	n instrument au gnature(s) on ti
l certify under PENALTY OF PERJURY under the laws of	the State of Californ	la that the foregoing pa	ragraph is true and correct.	
WITNESS my hand and official seal. Signature	(Seal)	NA N	SHOLITA PACKE Commission # 200 Notary Public - Cali	3587 K fornia K
	(Scar)		San Diego Coun My Comm. Expires Feb	
STATE OF CALIFORNIA)			
COUNTY OF STW DIEGO)			
On July 18, 2013 before me, of the who proved to me on the basis of satisfactory evidence acknowledged to me that he/she/lbey executed the same instrument the person of the entity upon baself of which the	to be the personal in his/hor/both auth	Notary Publy whose name(s) is/ar	ic, personally appeared JOH	IN SAPIENZA
instrument the person(s), or the entity upon behalf of which the	ne person(s) acted, e	xecuted the instrument.	ing that by maneralistic sign	nature(s) on the
I certify under PENALTY OF PERJURY under the laws of the	e State of Callfornia	that the foregoing part	agraph is true and correct.	
WITNESS my hand and official seal.			SHOLITA PACKER Commission # 2003587	
Signature State Hill	(Seal)	THE STATE OF THE S	Notary Public - Californio San Diego County My Comm. Expires Feb 7, 2	a vi
STATE OF)			
COUNTY OF)			
On			ublic, personally appeared /are subscribed to the within d that by his/her/their signa	GRAZIELLA instrument and ature(s) on the
VITNESS my hand and official seal.		Motivinelle		
Signature	(Seal)			

U.S. Application No. 13/873,662; Jones Day Doc	eket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF SAN DIEGO)	
instrument the person(s), or the entity upon behalf	of which the person(s) acted, ex	
I certify under PENALTY OF PERJURY under the	e laws of the State of California	that the foregoing paragraph is true and correct.
WITNESS my hand and official seal. Signature	(Seal)	SHOLITA PACKER Commission # 2003587 Notary Public - California San Diego County My Comm. Expires Feb 7, 2017
STATE OF CALIFORNIA)	
COUNTY OF)	
On JOLY 15th 203 before GINGSEE LEE, who proved to me on the basis of and acknowledged to me that he/she/prey execute instrument the person(s), or the entity upon behalf of I certify under PENALTY OF PERJURY under the WITNESS my hand and official seal. Signature	of which the person(s) acted, exec	OFFICIAL SEAL MAREK R. MACIEJEWSKI NOTARY PUBLIC CALIFORNIA SAN DIEGO COUNTY MY COMM. EXP. FEB. 16, 2017
STATE OF CALIFORNIA)	
COUNTY OF)	
On	actory evidence to be the person	Notary Public, personally appeared GARRICK (s) whose name(s) is/are subscribed to the within instrument and capacity(ics), and that by his/her/their signature(s) on the ted the instrument.
I certify under PENALTY OF PERJURY under the la	aws 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; Jo	ones Day Docket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to the that ne/sne/th	before me,, Notary Public, personally a of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to ney executed the same in his/her/their authorized capacity(ies), and that by his/y upon behalf of which the person(s) acted, executed the instrument.	ppeared JINGJING ZHAO, o the within instrument and /her/their signature(s) on the
I certify under PENALTY OF PERJU	URY under the laws of the State of California that the foregoing paragraph is true at	nd correct.
WITNESS my hand and official seal.		
Signature	(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
instrument and acknowledged to me t	before me,, Notary Public, person nown to me on the basis of satisfactory evidence to be the person(s) whose name(s) that he/she/they executed the same in his/her/their authorized capacity(ies), and that e entity upon behalf of which the person(s) acted, executed the instrument.	2) is subscribed to the within
Signature	(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
nstrument the person(s), or the entity	before me,	her/their signature(s) on the
ignature	(Seal)	

U.S. Application No. 13/873,662; Jo	nes Day Docket No.: 10624-316-	999
STATE OF CALIFORNIA)
COUNTY OF)
On who proved to me on the basis of acknowledged to me that he/she/th instrument the person(s), or the entity	ev executed the same in his/ne	, Notary Public, personally appeared JENNIFER RIGGS , ne person(s) whose name(s) is/are subscribed to the within instrument and r/their authorized capacity(ies), and that by his/her/their signature(s) on the n(s) acted, executed the instrument.
I certify under PENALTY OF PERJ	JRY under the laws of the State of	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 GAMBOA, personally known to me and acknowledged to me that he/she instrument the person(s), or the entity	they executed the same in his/h	, Notary Public, personally appeared JUAN ANTONIO ence to be the person(s) whose name(s) is subscribed to the within instrument per/their authorized capacity(ies), and that by his/her/their signature(s) on the (s) acted, executed the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)
STATE OF NEW JERSEY)	
COUNTY OF)	
modulitent and acknowledged to me ti	iat ne/sne/tnev executed the same	, Notary Public, personally appeared MARIE GEORGES bry evidence to be the person(s) whose name(s) is subscribed to the within in his/her/their authorized capacity(ies), and that by his/her/their signature(s) person(s) acted, executed the instrument.
WITNESS my hand and official seal.		
Signature	(S	Seal)

Page 7 of 10

ws of the State of California tha	t the foregoing paragraph is true and correct.
ws of the State of California tha	t the foregoing paragraph is true and correct.
the same in his/her/their author which the person(s) acted, execu	ized canacity(ies) and that by his/her/their signatura(s) on the
sfactory evidence to be the pers	on(s) whose name(s) is/are subscribed to the within instrument
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of satisfactory evidence to be the the same in his/her/their autho which the person(s) acted, exec	, Notary Public, personally appeared MOHIT ATUL e person(s) whose name(s) is subscribed to the within instrument rized capacity(ies), and that by his/her/their signature(s) on the uted the instrument.
e,	. Notary Public, personally appeared MOHIT ATLL
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on the basis of satisfactory evide by executed the same in his/her/the ehalf of which the person(s) acte	, Notary Public, personally appeared MATTHEW ence to be the person(s) whose name(s) is subscribed to the within neir authorized capacity(ies), and that by his/her/their signature(s) ed, executed the instrument.
me.	Notary Public personally appeared MATTHESSY
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U.S. Application No. 13/873,662; Jones	Day Docket No.: 10624-316-999	
STATE OF)	
COUNTY OF)	
acknowledged to me that he/she/they	before me, of satisfactory evidence to be the person(s) executed the same in his/her/their authorized pon behalf of which the person(s) acted, execute	Notary Public, personally appeared PHILIP PYE , whose name(s) is subscribed to the within instrument and d capacity(ies), and that by his/her/their signature(s) on the ed the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
instrument and acknowledged to me that	t he/she/they executed the same in his/her/their ntity upon behalf of which the person(s) acted, e	, Notary Public, personally appeared WILLIAM WEI - be the person(s) whose name(s) is subscribed to the within authorized capacity(ies), and that by his/her/their signature(s) executed the instrument.
STATE OF CALIFORNIA)	
COUNTY OF)	
On	n his/her/their authorized capacity(ies), and that	, Notary Public, personally appeared JAN ELSNER , who are subscribed to the within instrument and acknowledged to by his/her/their signature(s) on the instrument the person(s),
certify under PENALTY OF PERJURY	under the laws of the State of California that th	ne foregoing paragraph is true and correct.
VITNESS my hand and official seal.		
ignature	(Seal)	

U.S. Application No. 13/873,662; Jones Da	ay Docket No.: 10624-316-999	
STATE OF PENNSYLVANIA)	
COUNTY OF)	
instrument and acknowledged to me that he	before me, e on the basis of satisfactory evidence to be the e/she/they executed the same in his/her/their author ty upon behalf of which the person(s) acted, executed the same in his/her/their author ty upon behalf of which the person(s) acted, executed the same in his/her/their author ty upon behalf of which the person(s) acted, executed the same in his/her/their author ty upon behalf of which the person(s) acted, executed the same in his/her/their author ty upon behalf of which the person(s) acted.	_, Notary Public, personally appeared ANUSUYA e person(s) whose name(s) is subscribed to the within prized capacity(ies), and that by his/her/their signature(s) ted the instrument.
Signature	(Seal)	
ACCEPTED AND AGREED TO BY ASSI	IGNEE, SIGNAL PHARMACEUTICALS, LLC	<u>:</u>
Signature	Dat	e:
Printed name		
Title		

Page 10 of 10

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.	l
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 Alley, 7	. 2013	GRAZIELLASSIEVLIN Shevla	LS.
Date	, 2013	PATRICK PAPA	L.S.
Date	, 2013	BRANDEN GINGSEE LEE	L.S.
Date	, 2013	GARRICK PACKARD	LaS.

Page 2 of 10

Date	, 2013	JINGJING ZHAO	L.S.
Date	, 2013	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.

U.S. Application No. 13/873,662; Jo	nes Day Docket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that ne/sne/th	before me, f satisfactory evidence to be the person(s) wh ey executed the same in his/her/their authorize y upon behalf of which the person(s) acted, execut	, Notary Public, personally appeared ROY L. HARRIS , ose name(s) is/are subscribed to the within instrument and d capacity(ies), and that by his/her/their signature(s) on the ted the instrument.
I certify under PENALTY OF PERJU	JRY 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)	
instrument the person(s), or the entity	ey executed the same in his/her/their authorized upon behalf of which the person(s) acted, executed acted.	
WITNESS my hand and official seal.	JRY under the laws of the State of California that	the foregoing paragraph is true and correct.
	(Seal)	
STATE OF)	
COUNTY OF)	
cknowledged to me that he/she/the	oasis of satisfactory evidence to be the person(s)	Notary Public, personally appeared GRAZIELLA whose name(s) is/are subscribed to the within instrument and capacity(ies), and that by his/her/their signature(s) on the d the instrument.
ignature	(Seal)	

U.S. Application No. 13/8/3,662;	Jones Day Docket No.: 1062	4-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
On who proved to me on the basis acknowledged to me that he/she/instrument the person(s), or the ent	they executed the same in	his/her/their author	, Notary Public, personally appeared PATRICK PAPA , whose name(s) is/are subscribed to the within instrument and prized capacity(ies), and that by his/her/their signature(s) on the executed the instrument.
I certify under PENALTY OF PER	JURY under the laws of the	State of California	that the foregoing paragraph is true and correct.
WITNESS my hand and official se	al.		
Signature		(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
and acknowledged to me that he/s instrument the person(s), or the enti	she/they executed the same is ity upon behalf of which the part of the same is	in his/her/their auti person(s) acted, ex State of California	, Notary Public, personally appeared BRANDEN person(s) whose name(s) is/are subscribed to the within instrument horized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that he/she/t instrument the person(s), or the enti-	hey executed the same in I ty upon behalf of which the p JURY under the laws of the S	his/her/their author person(s) acted, exe	, Notary Public, personally appeared GARRICK on(s) whose name(s) is/are subscribed to the within instrument and rized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
Signature		(Seal)	

WITNESS my hand and official seal.		
I certify under PENALTY OF PERJURY under the	e laws of the State of California th	hat the foregoing paragraph is true and correct.
On before MORTENSEN, who proved to me on the basis of and acknowledged to me that he/she/they execute instrument the person(s), or the entity upon behalf	ed the same in his/her/their auth-	, Notary Public, personally appeared DEBORAH erson(s) whose name(s) is/are subscribed to the within instrument orized capacity(ies), and that by his/her/their signature(s) on the cuted the instrument.
COUNTY OF)	
STATE OF CALIFORNIA)	
Signature	(Seal)	
WITNESS my hand and official seal.		
ANTHON I JOKIEL, personally known to me	on the basis of satisfactory evide hey executed the same in his/her/i	, Notary Public, personally appeared PATRICK nee to be the person(s) whose name(s) is subscribed to the within their authorized capacity(ies), and that by his/her/their signature(s) red, executed the instrument.
COUNTY OF)	
STATE OF NEW JERSEY)	
Signature	(Seal)	
WITNESS my hand and official seal.		
I certify under PENALTY OF PERJURY under t	he laws of the State of California	that the foregoing paragraph is true and correct.
Onbefore who proved to me on the basis of satisfactor acknowledged to me that he/she/they executed instrument the person(s), or the entity upon behal	the same in his/her/their autho	, Notary Public, personally appeared JINGJING ZHAO , whose name(s) is/are subscribed to the within instrument and orized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
COUNTY OF)	
STATE OF CALIFORNIA)	

U.S. Application No. 13/873,662; Jones Day Do	ocket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
On befor who proved to me on the basis of satisfactor acknowledged to me that he/she/they executed instrument the person(s), or the entity upon beh	ed the same in his/her/their authori	, Notary Public, personally appeared JENNIFER RIGGS whose name(s) is/are subscribed to the within instrument and ized capacity(ies), and that by his/her/their signature(s) on the cuted the instrument.
I certify under PENALTY OF PERJURY under	the laws of the State of California th	nat the foregoing paragraph is true and correct.
WITNESS my hand and official seal.		
Signature	(Seal)	
STATE OF NEW YORK)	
COUNTY OF)	
GAMBOA , personally known to me on the ba	asis of satisfactory evidence to be the cuted the same in his/her/their authors.	Notary Public, personally appeared JUAN ANTONIC person(s) whose name(s) is subscribed to the within instrument orized capacity(ies), and that by his/her/their signature(s) on the cuted the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
On befor BEAUCHAMPS , personally known to me or instrument and acknowledged to me that he/sho on the instrument the person(s), or the entity up	e/they executed the same in his/her/th	, Notary Public, personally appeared MARIE GEORGES to be the person(s) whose name(s) is subscribed to the within heir authorized capacity(ies), and that by his/her/their signature(s ed, executed the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)	

U.S. Application No. 13/873,662; J	ones Day Docket No.: 1062	24-316-999	
STATE OF NEW JERSEY)	
COUNTY OF)	
on the instrument the person(s), or t	e that he/she/they executed he entity upon behalf of wh	the same in his/her	, Notary Public, personally appeared MATTHEW dence to be the person(s) whose name(s) is subscribed to the within /their authorized capacity(ies), and that by his/her/their signature(s) eted, executed the instrument.
WITNESS my hand and official sea	1.		
Signature		(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
KOTHARE, personally known to rand acknowledged to me that he/shinstrument the person(s), or the entit	ne/they executed the same by upon behalf of which the	in his/her/their autl	, Notary Public, personally appeared MOHIT ATUL he person(s) whose name(s) is subscribed to the within instrument norized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
Signature		(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
On NINKOVIC, who proved to me on and acknowledged to me that he/sh instrument the person(s), or the entity	e/they executed the same i	in his/her/their auth	, Notary Public, personally appeared SOPHIE PERRIN - erson(s) whose name(s) is/are subscribed to the within instrument sorized capacity(ies), and that by his/her/their signature(s) on the excuted the instrument.
certify under PENALTY OF PERJU	URY under the laws of the	State of California t	hat 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.: 106	24-316-999	
STATE OF)	
COUNTY OF)	
Onpersonally known to me on the acknowledged to me that he/she instrument the person(s), or the en	they executed the same in	n his/her/their autho	Notary Public, personally appeared PHILIP PYE , n(s) whose name(s) is subscribed to the within instrument and rized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
WITNESS my hand and official so	eal.		
Signature		(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
on the instrument the person(s), or WITNESS my hand and official se	the entity upon behalf of wh	the same in his/her/t nich the person(s) act	, Notary Public, personally appeared WILLIAM WEI-to be the person(s) whose name(s) is subscribed to the within heir authorized capacity(ies), and that by his/her/their signature(s) ed, executed the instrument.
Signature		(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
On	ame in his/her/their authorize	ed capacity(ies), and	, Notary Public, personally appeared JAN ELSNER , who s) is/are subscribed to the within instrument and acknowledged to that by his/her/their signature(s) on the instrument the person(s),
certify under PENALTY OF PER	JURY under the laws of the	State of California th	nat the foregoing paragraph is true and correct.
VITNESS my hand and official sea	al.		
ignature		(Seal)	

U.S. Application No. 13/873,662; Jones	s Day Docket No.: 10624-316-999	
STATE OF PENNSYLVANIA)	
COUNTY OF)	
On CHOUDHURY, personally known to instrument and acknowledged to me the on the instrument the person(s), or the element of the instrument and and official seal.	at he/she/they executed the same in his	Notary Public, personally appeared ANUSUYA lence to be the person(s) whose name(s) is subscribed to the within /her/their authorized capacity(ies), and that by his/her/their signature(s) s) acted, executed the instrument.
Signature	(Seal)	
ACCEPTED AND AGREED TO BY A	ASSIGNEE, SIGNAL PHARMACEU	TICALS, 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, file) 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.
1 believe I am an original joint inventor of a claimed invention in the application.

Authorization to Permit Access to Application by Participating Office

of not more than five (5) years, or both.

☑ 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.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment

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	, 2013	GRAZIELLA SHEVLIN	L.S
Date	, 2013	PATRICK PAPA	L.S.
Date	, 2013	BRANDEN GINGSEE LEE	L.S.
Date	, 2013	GARRICK PACKARD	L.S.

Page 2 of 10

Date		, 2013	JINGJING ZHAO	L.S
Date		, 2013	PATRICK ANTHONY JOKIEL	L.S
Date		, 2013	DEBORAH MORTENSEN	L.S
Date		, 2013	JENNIFER RIGGS	L.S.
Date	July 22	, 2013	JUM 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.

U.S. Application No. 13/873,662; Jones Day D	Oocket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that ne/sne/they execut	ore me,, Notary Public, personall tory evidence to be the person(s) whose name(s) is/are subscribed ted the same in his/her/their authorized capacity(ies), and that by half of which the person(s) acted, executed the instrument.	y appeared ROY L. HARRIS , I to the within instrument and nis/her/their signature(s) on the
I certify under PENALTY OF PERJURY unde	er the laws of the State of California that the foregoing paragraph is true	e and correct.
WITNESS my hand and official seal.		
Signature	(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
instrument the person(s), or the entity upon beh	re me,	is/her/their signature(s) on the
Signature	(Seal)	
STATE OF)	
COUNTY OF)	
cknowledged to me that he/she/they execute	re me,, Notary Public, person atisfactory evidence to be the person(s) whose name(s) is/are subscribed the same in his/her/their authorized capacity(ies), and that by hialf of which the person(s) acted, executed the instrument.	ed to the within instrument and
ignature	(Seal)	

U.S. Application No. 13/873,662; J	ones Day Docket No.: 10624-316-99	9
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that he/she/t		, Notary Public, personally appeared PATRICK PAPA , person(s) whose name(s) is/are subscribed to the within instrument and heir authorized capacity(ies), and that by his/her/their signature(s) on the acted, executed the instrument.
I certify under PENALTY OF PER.	JURY under the laws of the State of	California that the foregoing paragraph is true and correct.
WITNESS my hand and official sea	ıl.	
Signature	(S	eal)
STATE OF CALIFORNIA)	
COUNTY OF)	
GINGSEE LEE, who proved to me and acknowledged to me that he/sl instrument the person(s), or the entil certify under PENALTY OF PERIWITNESS my hand and official sea	e on the basis of satisfactory evidence the/they executed the same in his/he ty upon behalf of which the person(s) JURY under the laws of the State of O	Notary Public, personally appeared BRANDEN to be the person(s) whose name(s) is/are subscribed to the within instrument r/their authorized capacity(ies), and that by his/her/their signature(s) on the acted, executed the instrument. California that the foregoing paragraph is true and correct.
Signature	(Se	eal)
STATE OF CALIFORNIA)	
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acknowledged to me that he/she/tl instrument the person(s), or the entit	hey executed the same in his/her/th ty upon behalf of which the person(s) (URY under the laws of the State of C	, Notary Public, personally appeared GARRICK the the person(s) whose name(s) is/are subscribed to the within instrument and neir authorized capacity(ies), and that by his/her/their signature(s) on the acted, executed the instrument. California that the foregoing paragraph is true and correct.
Signature	(Se	al)

U.S. Application No. 13/873,662; J	ones Day Docket No.: 10624-31	16-999
STATE OF CALIFORNIA)
COUNTY OF)
acknowledged to me that he/she/t instrument the person(s), or the enti	they executed the same in his/ ity upon behalf of which the pers	, Notary Public, personally appeared JINGJING ZHAO , the the person(s) whose name(s) is/are subscribed to the within instrument and s/her/their authorized capacity(ies), and that by his/her/their signature(s) on the rson(s) acted, executed the instrument.
WITNESS my hand and official sea	al.	
Signature		(Seal)
STATE OF NEW JERSEY)
COUNTY OF)
ANTHONY JOKIEL, personally linstrument and acknowledged to me	known to me on the basis of sate that he/she/they executed the sate he entity upon behalf of which the	, Notary Public, personally appeared PATRICK atisfactory evidence to be the person(s) whose name(s) is subscribed to the within same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) the person(s) acted, executed the instrument.
Signature		(Seal)
STATE OF CALIFORNIA)
COUNTY OF)
and acknowledged to me that he/sh nstrument the person(s), or the entity	ne/they executed the same in his y upon behalf of which the perso	, Notary Public, personally appeared DEBORAH dence to be the person(s) whose name(s) is/are subscribed to the within instrument is/her/their authorized capacity(ies), and that by his/her/their signature(s) on the son(s) acted, executed the instrument.
WITNESS my hand and official seal		C 8F magazina and and context
Signature		_(Seal)

Page 6 of 10

U.S. Application No. 13/873,662; Jones Day D	cket No.: 10624-316-999	
STATE OF CALIFORNIA)	
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WITNESS my hand and official seal.		
Signature	(Seal)	
	nne, Notary Public, personally appeared JUAN AN of satisfactory evidence to be the person(s) whose name(s) is subscribed to the within in ed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) of which the person(s) acted, executed the instrument.	VTONIO istrument s) on the
WITNESS my hand and official seal. Signature	(Seal) STORY PUBLICATION OF THE CONTRACT (Seal) Control Property (Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
instrument and acknowledged to me that he/she/the	basis of satisfactory evidence to be the person(s) whose name(s) is subscribed to the y executed the same in his/her/their authorized capacity(ies), and that by his/her/their signs chalf of which the person(s) acted, executed the instrument.	
Signature	Seal) William Public of New Jersey Commission Explices 9/17/2013	

U.S. Application No. 13/873,662; Jone	s Day Docket No.: 10624-316-999	
STATE OF NEW JERSEY)	
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WITNESS my hand and official seal.		
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and acknowledged to me that he/she/t	hey executed the same in his/her/their authorize apon behalf of which the person(s) acted, executed	, Notary Public, personally appeared MOHIT ATUI rson(s) whose name(s) is subscribed to the within instrumen d capacity(ies), and that by his/her/their signature(s) on the fitth the instrument.
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and acknowledged to me that he/she/tl instrument the person(s), or the entity u	hey executed the same in his/her/their authorized pon behalf of which the person(s) acted, executed	
certify under PENALTY OF PERJUR	Y under the laws of the State of California that th	e 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)	
acknowledged to me that he/she/	before me, basis of satisfactory evidence to be the person(s) they executed the same in his/her/their authorize ity upon behalf of which the person(s) acted, execu-	, Notary Public, personally appeared PHILIP PYE , s) whose name(s) is subscribed to the within instrument and ed capacity(ies), and that by his/her/their signature(s) on the ited the instrument.
WITNESS my hand and official sea	al.	
Signature	(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
nstrument and acknowledged to me on the instrument the person(s), or the way of the instrument the person of the way of t	e that he/she/they executed the same in his/her/the the entity upon behalf of which the person(s) acted.	, Notary Public, personally appeared WILLIAM WEI -be the person(s) whose name(s) is subscribed to the within ir authorized capacity(ies), and that by his/her/their signature(s), executed the instrument.
Signature	(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
ne that he/she/they executed the sai or the entity upon behalf of which the	before me, ctory evidence to be the person(s) whose name(s) me in his/her/their authorized capacity(ies), and the ne person(s) acted, executed the instrument. (URY under the laws of the State of California that	, Notary Public, personally appeared JAN ELSNER , who is/are subscribed to the within instrument and acknowledged to at by his/her/their signature(s) on the instrument the person(s), the foregoing paragraph is true and correct.
VITNESS my hand and official sea.	I.	
ignature	(Seal)	

U.S. Application No. 13/873,662; Jone	es Day Docket No.: 10624-316-999	
STATE OF PENNSYLVANIA)	
COUNTY OF)	
instrument and acknowledged to me th	before me,	, Notary Public, personally appeared ANUSUYA to be the person(s) whose name(s) is subscribed to the within peir authorized capacity(ies), and that by his/her/their signature(s) d, executed the instrument.
Signature	(Seal)	
ACCEPTED AND AGREED TO BY	ASSIGNEE, SIGNAL PHARMACEUTICAL	LS, 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.

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

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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	JINGJING ZHAO	_ L.S.
Date		_ ,2013	PATRICK ANTHONY JOKIEL	_ L.S.
Date		_ ,2013	DEBORAH MORTENSEN	_ L.S.
Date		_ ,2013	JENNIFER RIGGS	_ L.S.
Date		, 2013	JUAN ANTONIO GAMBOA	
Date	22 July		MARIE GEORGES BEAUCHAMPS	
Date	22 July	_ ,2013	Matthew Michael Kreilein	_ L.S.
Date	22 July	, 2013	M. Kallara	L.S.
Date _	of Aug.	, 2013	SOPHIE PERRIN-NINKOVIC	, L.S.
Date _		, 2013	PHILIP PYE	L.S.
Date _	22 July	, 2013	WILLIAM WEI-HWA LEONG	L.S.
Date _		, 2013	JAN ELSNER	L.S.
Date _		, 2013	ANUSUYA CHOUDHURY	L.S.

U.S. Application No. 13/873,662; J	Jones Day Docket No.: 10624-316-	999
STATE OF CALIFORNIA)
COUNTY OF)
Onwho proved to me on the basis acknowledged to me that he/she/tinstrument the person(s), or the entitle	they executed the same in his/he	, Notary Public, personally appeared ROY L. HARRIS , ne person(s) whose name(s) is/are subscribed to the within instrument and r/their authorized capacity(ies), and that by his/her/their signature(s) on the n(s) acted, executed the instrument.
I certify under PENALTY OF PER	JURY under the laws of the State of	of California that the foregoing paragraph is true and correct.
WITNESS my hand and official sea	al.	
Signature		(Seal)
STATE OF CALIFORNIA)
COUNTY OF		
On	hey executed the same in his/hei	, Notary Public, personally appeared JOHN SAPIENZA , the person(s) whose name(s) is/are subscribed to the within instrument and their authorized capacity(ies), and that by his/her/their signature(s) on the (s) acted, executed the instrument.
certify under PENALTY OF PERJ	JURY under the laws of the State o	f California that the foregoing paragraph is true and correct.
WITNESS my hand and official sea	ıl.	
Signature	(Seal)
STATE OF)	
COUNTY OF)	
On	ney executed the same in his/her	, Notary Public, personally appeared GRAZIELLA be the person(s) whose name(s) is/are subscribed to the within instrument and /their authorized capacity(ies), and that by his/her/their signature(s) on the s) acted, executed the instrument.
WITNESS my hand and official seal	l.	
ignature	(Seal)

U.S. Application No. 13/873,662;	Jones Day Docket No.: 10624-3	316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
On who proved to me on the basis acknowledged to me that he/she/instrument the person(s), or the entitle	they executed the same in hi	is/her/their autho	, Notary Public, personally appeared PATRICK PAPA , whose name(s) is/are subscribed to the within instrument and rized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
I certify under PENALTY OF PER	RJURY under the laws of the St	ate of California	hat the foregoing paragraph is true and correct.
WITNESS my hand and official se	al.		
Signature		(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
GINGSEE LEE, who proved to mand acknowledged to me that he/s instrument the person(s), or the ent	the on the basis of satisfactory every every expectate the same in ity upon behalf of which the perturbation of the State al.	ridence to be the phis/her/their autherson(s) acted, exe	, Notary Public, personally appeared BRANDEN person(s) whose name(s) is/are subscribed to the within instrument orized capacity(ies), and that by his/her/their signature(s) on the cuted the instrument. that the foregoing paragraph is true and correct.
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that he/she/t nstrument the person(s), or the enti	they executed the same in his ity upon behalf of which the per JURY under the laws of the Sta	s/her/their author rson(s) acted, exe	, Notary Public, personally appeared GARRICK n(s) whose name(s) is/are subscribed to the within instrument and ized capacity(ies), and that by his/her/their signature(s) on the cuted the instrument. nat the foregoing paragraph is true and correct.
Signature		(Seal)	

U.S. Application No. 13/8/3,002; Johes Day I.	OCKCI NO 10024-310-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that he/she/they execu	re me,, Notary Public, personally appeared tory evidence to be the person(s) whose name(s) is/are subscribed to the wite the same in his/her/their authorized capacity(ies), and that by his/her/their nalf of which the person(s) acted, executed the instrument.	HINGJING ZHAO, hin instrument and signature(s) on the
I certify under PENALTY OF PERJURY under	er 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)	
instrument and acknowledged to me that he/sl	fore me,, Notary Public, personally ap me on the basis of satisfactory evidence to be the person(s) whose name(s) is sub- ne/they executed the same in his/her/their authorized capacity(ies), and that by his/h pon behalf of which the person(s) acted, executed the instrument.	peared PATRICK scribed to the within ner/their signature(s)
Signature	(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
and acknowledged to me that he/she/they ex-	fore me,, Notary Public, personally appris of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the same in his/her/their authorized capacity(ies), and that by his/her/their half of which the person(s) acted, executed the instrument.	peared DEBORAH ne within instrument signature(s) on the
I certify under PENALTY OF PERJURY und	er the laws of the State of California that the foregoing paragraph is true and correct	i.
WITNESS my hand and official seal.		
Signature	(Seal)	

GT LTD OF OLI IFODIUL	
STATE OF CALIFORNIA)
COUNTY OF)
who proved to me on the basis of satisfactor acknowledged to me that he/she/they execute	me,, Notary Public, personally appeared JENNIFER ry evidence to be the person(s) whose name(s) is/are subscribed to the within instrum the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) if 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)
and acknowledged to me that he/she/they execu	me,, Notary Public, personally appeared JUAN ANTs of satisfactory evidence to be the person(s) whose name(s) is subscribed to the within insted the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) for which the person(s) acted, executed the instrument.
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WITNESS my hand and official seal.	(Seal) CONSTRUCT MAY AND CONSTRUCTION OF THE C
WITNESS my hand and official seal.	(Seal) AND AND LOCAL WAY AND CO
WITNESS my hand and official seal.	(Seal) SERENTABLICATION NOV MARKE

U.S. Application No. 13/873,662; Jones Day Docket No.: 10624-3	16-999	
STATE OF NEW JERSEY)	
COUNTY OF ESSEX)	
On Diplomation 2013 before me, MICHAEL KREILEIN personally known to me on the basis of sinstrument and acknowledged to me that he/she/they executed the on the instrument the person(s), or the entity upon behalf of which	same in h	Notary Public, personally appeared MATTHEW by evidence to be the person(s) whose name(s) is subscribed to the within is/her/their authorized capacity(ies), and that by his/her/their signature(s) acted, executed the instrument.
WITNESS my hand and official seal.		MEICE 3. INGR ID # 2378059
Signature	(Seal)	NOTARY PUBLIC OF NEW JERSEY CORMISSION DESCRIPTIONS
STATE OF NEW JERSEY)	
COUNTY OF)	
ACTHARE, personally known to me on the basis of satisfactory of and acknowledged to me that he/she/they executed the same in h instrument the person(s), or the entity upon behalf of which the person WITNESS my hand and official scal. Signature	is/her/the	o be the pyson(s) whose name(s) is subscribed to the within instrument ir authorized capacity(ies), and that by his/her/their signature(s) on the ed, executed the instrument. INSILE S. INGE ID & 2370059 INSILE OF ISSUESSY CONSTRUCTOR PUBLICATION 3
STATE OF CALIFORNIA)	
COUNTY OF SAN DIEGO	1	KEA, Notary Public, personally appeared SOPHIE PERRIN-
NINKOVIC, who proved to me on the basis of satisfactory evider	nce to be is/her/thei	the person(s) whose name(s) is/are subscribed to the within instrument authorized capacity(ies), and that by his/her/their signature(s) on the
I certify under PENALTY OF PERJURY under the laws of the State	e of Califo	ornia that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.		SHOLITA PACKER Commission # 2003587
Signature The 100	(Seal)	Notary Public - California San Diego County My Comm. Expires Feb 7, 2017

U.S. Application No. 13/873,662; Jones Day D	ocket No.: 10624-316-999		
STATE OF)		
COUNTY OF)		
On befi personally known to me on the basis of sat acknowledged to me that he/she/they execut instrument the person(s), or the entity upon bel	ed the same in his/her/their	aumorized capacity(165), and mai of	sonally appeared PHILIP PYE, bed to the within instrument and y his/her/their signature(s) on the
WITNESS my hand and official seal.			
Signature	(Seal)		
STATE OF NEW JERSEY)		
COUNTY OF ESSEX)		
instrument and acknowledged to me that he/sh on the instrument the person(s), or the entity up witness my hand and official seal.	oon behalf of which the person	(s) acted, executed the instrument, INEICE S. INGE ID & 2378059 NOVAM PUBLICOF NEW JERSEY Commission Equives 9/17/2013	· · · · · · · · · · · · · · · · · · ·
STATE OF CALIFORNIA)		
COUNTY OF)		
On before proved to me on the basis of satisfactory evidence that he/she/they executed the same in his/hor the entity upon behalf of which the person(s) I certify under PENALTY OF PERJURY under	nce to be the person(s) whose a er/their authorized capacity(ies acted, executed the instrumen	s), and that by his/her/their signature(t.	s) on the instrument the person(s),
WITNESS my hand and official seal.			
Signature	(Seal)		

U.S. Application No. 13/873,662; Jon	es Day Docket No.: 10624-316-999	
STATE OF PENNSYLVANIA)	
COUNTY OF)	
instrument and acknowledged to me to on the instrument the person(s), or the	that he/she/they executed the same in his/be entity upon behalf of which the person(s)	, Notary Public, personally appeared ANUSUYA nce to be the person(s) whose name(s) is subscribed to the within ner/their authorized capacity(ies), and that by his/her/their signature(s) acted, executed the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)	
ACCEPTED AND AGREED TO BY	ASSIGNEE, SIGNAL PHARMACEUT	TICALS, LLC:
Signature		Date:
Printed name		
(T) 1		

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.

of a factor of the officer of the of	
⊠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, file) the filing date and application number of said application when known.	led
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.	ent

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 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	, 2013	GRAZIELLA SHEVLIN	L.S
Date	, 2013	PATRICK PAPA	L.S
Date	, 2013	BRANDEN GINGSEE LEE	L.S
Date	, 2013	GARRICK PACKARD	L.S

U.S. A	pplication No. 13/873,662; Jones Da	y Docket No.:	10624-316-999	
Date	7/18	_ ,2013	JINGJING ZHAO	_ L.S.
Date		_ , 2013	PATRICK ANTHONY JOKIEL	_ L.S.
Date	7/18	_ , 2013	DEBORAH MORTENSEN	_ L.S.
Date	7/18	_ ,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 _	7/18	, 2013	Jan Elsner	L.S.
Date _		, 2013	ANUSUYA CHOUDHURY	L.S.

U.S. Application No. 13/873,662; Jones	Day Docket No.: 10624	-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
On who proved to me on the basis of sacknowledged to me that he/she/they instrument the person(s), or the entity u	executed the same in l	his/her/their author	Notary Public, personally appeared ROY L. HARRIS , whose name(s) is/are subscribed to the within instrument and rized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
l certify under PENALTY OF PERJUR	Y under the laws of the S	State of California	that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.			
Signature		(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that he/she/they instrument the person(s), or the entity u	executed the same in leading pon behalf of which the p	his/her/their author person(s) acted, exe	, Notary Public, personally appeared JOHN SAPIENZA, whose name(s) is/are subscribed to the within instrument and rized capacity(ies), and that by his/her/their signature(s) on the ceuted the instrument.
Signature		(Seal)	
STATE OF)	
COUNTY OF)	
On SHEVLIN, who proved to me on the b acknowledged to me that he/she/they instrument the person(s), or the entity up	executed the same in I	his/her/their author	, Notary Public, personally appeared GRAZIELLA on(s) whose name(s) is/are subscribed to the within instrument and rized capacity(ies), and that by his/her/their signature(s) on the ecuted the instrument.
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)	
acknowledged to me that he/she/they	before me,	, Notary Public, personally appeared PATRICK PAPA , ose name(s) is/are subscribed to the within instrument and d capacity(ies), and that by his/her/their signature(s) on the ed the instrument.
I certify under PENALTY OF PERJURY	Y 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)	
and acknowledged to me that he/she/th instrument the person(s), or the entity up		
Signature	(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that he/she/they of instrument the person(s), or the entity up	before me,asis of satisfactory evidence to be the person(s) executed the same in his/her/their authorized on behalf of which the person(s) acted, executed a under the laws of the State of California that the	
Signature	(Seal)	

U.S. Application No. 13/873,662; Jones Day	Docket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF SAW DIEGO)	
On Jucy 18, 2013 be who proved to me on the basis of satisfa acknowledged to me that ke/she/they executionstrument the person(s), or the entity upon the	fore me, HOLITA ACKE nectory evidence to be the person(s) suited the same in his/her/their author nehalf of which the person(s) acted, exe	Notary Public, personally appeared JINGJING ZHAO, whose name(s) is/are subscribed to the within instrument and ized capacity(ies), and that by his/her/their signature(s) on the cuted the instrument.
I certify under PENALTY OF PERJURY un	der the laws of the State of California t	hat the foregoing paragraph is true and correct.
WITNESS my hand and official seal. Signature	(Seal)	SHOLITA PACKER Commission # 2003587 Notary Public - California San Diego County My Comm. Expires Feb 7, 2017
STATE OF NEW JERSEY)	
COUNTY OF)	
	he/they executed the same in his/her/th	, Notary Public, personally appeared PATRICK ce to be the person(s) whose name(s) is subscribed to the within their authorized capacity(ies), and that by his/her/their signature(s) d, executed the instrument.
Signature	(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF Som DIEGO	_) /	
On Jacy 19, 2013 be MORTENSEN, who proved to me on the bas and acknowledged to me that Mc/she/the/ exinstrument the person(s), or the entity upon be	ecuted the same in bis/her/their author	Notary Public, personally appeared DEBORAH resonts) whose name(s) is/are subscribed to the within instrument rized capacity(iss), and that by his/her/their signature(s) on the atted the instrument.
I certify under PENALTY OF PERJURY under	er the laws of the State of California the	nt the foregoing paragraph is true and correct.
WITNESS my hand and official seal.	7	SHOLITA PACKER Commission # 2003587 Notary Public - California
Signature Shut God	(Seal)	San Diego County My Comm. Expires Feb 7, 2017

U.S. Application No. 13/873,662; Jones Day I	Docket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF SAN VIECO)	
acknowledged to me that he/she/they execut	ore me, SHOLITA ACKER, No story evidence to be the person(s) whose nare ted the same in his/her/their authorized capacihalf of which the person(s) acted, executed the i	ntary Public, personally appeared JENNIFER RIGGS, ne(s) is/arc subscribed to the within instrument and city(ics), and that by his/her/their signature(s) on the instrument.
I certify under PENALTY OF PERJURY under	er the laws of the State of California that the fore	egoing paragraph is true and correct.
WITNESS my hand and official seal. Signature	(Seal)	SHOLITA PACKER Commission # 2003587 Notary Public - California San Diego County My Comm. Expires Feb 7, 2017
STATE OF NEW YORK)	
COUNTY OF)	
and acknowledged to me that he/she/they exec	ore me,, No nasis of satisfactory evidence to be the person(s) recuted the same in his/her/their authorized capa nalf of which the person(s) acted, executed the in	otary Public, personally appeared JUAN ANTONIO whose name(s) is subscribed to the within instrument acity(ies), and that by his/her/their signature(s) on the strument.
Signature	(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
BEAUCHAMIPS, personally known to me on	i the basis of satisfactory evidence to be the publicly they executed the same in his/her/their authorized.	ary Public, personally appeared MARIE GEORGES person(s) whose name(s) is subscribed to the within ted capacity(ies), and that by his/her/their signature(s) the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)	

U.S. Application No. 13/873,662; J	ones Day Docket No.: 1062	4-316-999	
STATE OF NEW JERSEY)	
COUNTY OF)	
On	e that he/she/they executed t	he same in his/her/th	, Notary Public, personally appeared MATTHEW nee to be the person(s) whose name(s) is subscribed to the within their authorized capacity(ies), and that by his/her/their signature(s d, executed the instrument.
WITNESS my hand and official sea	ıl.		
Signature		(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
On KOTHARE, personally known to a and acknowledged to me that he/sl instrument the person(s), or the enti-	he/they executed the same i	in his/her/their author	, Notary Public, personally appeared MOHIT ATUI person(s) whose name(s) is subscribed to the within instrumentized capacity(ies), and that by his/her/their signature(s) on the uted the instrument.
WITNESS my hand and official sea	1.		
Signature	-	(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
On	ne/they executed the same i	n his/her/their autho	Notary Public, personally appeared SOPHIE PERRIN -son(s) whose name(s) is/are subscribed to the within instrument rized capacity(ies), and that by his/her/their signature(s) on the uted the instrument.
I certify under PENALTY OF PERJ	URY under the laws of the	State of California th	at the foregoing paragraph is true and correct.
WITNESS my hand and official sea	I.		
Signature		(Seal)	

U.S. Application No. 13/873,662; Jones Day Docket No.:	10624-316-999	
STATE OF)	
COUNTY OF)	
On before me, personally known to me on the basis of satisfactory e acknowledged to me that he/she/they executed the san instrument the person(s), or the entity upon behalf of which	ne in his/her/their authoriz	Notary Public, personally appeared PHILIP PYE, s) whose name(s) is subscribed to the within instrument and ed capacity(ies), and that by his/her/their signature(s) on the ated the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)	
STATE OF NEW JERSEY)	,
COUNTY OF)	
HWA LEONG, personally known to me on the basis instrument and acknowledged to me that he/she/they exec on the instrument the person(s), or the entity upon behalf of WITNESS my hand and official seal. Signature	uted the same in his/her/the of which the person(s) acted,	, Notary Public, personally appeared WILLIAM WEIbe the person(s) whose name(s) is subscribed to the within authorized capacity(ies), and that by his/her/their signature(s) executed the instrument.
STATE OF CALIFORNIA)	
On Jucy 18, 2013 before me, Jeroved to me on the basis of satisfactory evidence to be the me that he/she/they executed the same in his/ber/their author the entity upon behalf of which the person(s) acted, exec	norized capacity(jes), and th	, Notary Public, personally appeared JAN ELSNER, who stare subscribed to the within instrument and acknowledged to at by his/hef/thefr signature(s) on the instrument the person(s),
I certify under PENALTY OF PERJURY under the laws of	f the State of California that	the foregoing paragraph is true and correct.
WITNESS my hand and official seal. Signature	(Seal)	SHOLITA PACKER Commission # 2003587 Notary Public - California San Diego County My Comm. Expires Feb 7, 2017

U.S. Application No. 13/873,662; Jone	es Day Docket No.: 10624-316-999	
STATE OF PENNSYLVANIA)	
COUNTY OF)	
On CHOUDHURY, personally known to instrument and acknowledged to me to on the instrument the person(s), or the	hat he/she/they executed the same in	, Notary Public, personally appeared ANUSUYA evidence to be the person(s) whose name(s) is subscribed to the within his/her/their authorized capacity(ies), and that by his/her/their signature(s) son(s) acted, executed the instrument.
WITNESS my hand and official seal.		
Signature	(Sea	1)
ACCEPTED AND AGREED TO BY	ASSIGNEE, SIGNAL PHARMAC	CEUTICALS, 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) the filing date and application number of said application when known.	, filed
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 impris	sonment

Authorization to Permit Access to Application by Participating Office

of not more than five (5) years, or both.

☑ 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.

PATENT REEL: 031270 FRAME: 0075 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	, 2013	GRAZIELLA SHEVLIN	L.S
Date	, 2013	PATRICK PAPA	L.S
Date	, 2013	BRANDEN GINGSEE LEE	L.S
Date	, 2013	GARRICK PACKARD	L.S

Page 2 of 10

J.S. Application No. 13/8/3	1,062; Jones Day Docket No.		
Date	, 2013	JINGJING ZHAO	L.S.
Date	, 2013	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		SOPHIE PERRIN-NINKOVIC	L.S.
Date	,2013	PHILIP PYE PHILIP PYE	L.S.
Date			L.S.
Date	, 2013	JAN ELSNER	L.S.
Date	, 2013	ANUSUYA CHOUDHURY	L.S.

U.S. Application No. 13/873,662; J	Jones Day Docket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that he/she/	before me,, Notary Public, perso of satisfactory evidence to be the person(s) whose name(s) is/are subscrythey executed the same in his/her/their authorized capacity(ies), and that litity upon behalf of which the person(s) acted, executed the instrument.	onally appeared ROY L. HARRIS ribed to the within instrument and by his/her/their signature(s) on the
I certify under PENALTY OF PER	RJURY under the laws of the State of California that the foregoing paragraph is	true and correct.
WITNESS my hand and official se	eal.	
Signature	(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that he/she/	before me,	nally appeared JOHN SAPIENZA ribed to the within instrument and by his/her/their signature(s) on the
l certify under PENALTY OF PER	RJURY under the laws of the State of California that the foregoing paragraph is	true and correct.
WITNESS my hand and official se	val.	
Signature	(Seal)	
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COUNTY OF)	
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Signature	(Seal)	

U.S. Application No. 13/873,662; Jo	ones Day Docket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
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I certify under PENALTY OF PERJ	URY under the laws of the State of Ca	alifornia that the foregoing paragraph is true and correct.
WITNESS my hand and official sea	l.	
Signature	(Sea	1)
STATE OF CALIFORNIA)	
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STATE OF CALIFORNIA)	
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Signature	(Sea	

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the laws of the State of California that the foregoing paragraph is true and correct.	
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U.S. Application No. 13/873,662; Jones I	Day Docket No.: 10624-316-999	
STATE OF CALIFORNIA)	
COUNTY OF)	
acknowledged to me that he/she/they e	before me,	Notary Public, personally appeared JENNIFER RIGGS , name(s) is/are subscribed to the within instrument and apacity(ies), and that by his/her/their signature(s) on the he 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)	
GAMBOA , personally known to me on and acknowledged to me that he/she/the	the basis of satisfactory evidence to be the perso	Notary Public, personally appeared JUAN ANTONIO on(s) whose name(s) is subscribed to the within instrument capacity(ies), and that by his/her/their signature(s) on the he instrument.
Signature	(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
instrument and acknowledged to me that	before me, me on the basis of satisfactory evidence to be he/she/they executed the same in his/her/their au tity upon behalf of which the person(s) acted, exe	Notary Public, personally appeared MARIE GEORGES the person(s) whose name(s) is subscribed to the within thorized capacity(ies), and that by his/her/their signature(s) cuted the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)	

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vidence to be the person his/her/their autho person(s) acted, exec	, Notary Public, personally appeared SOPHIE PERRIN -son(s) whose name(s) is/are subscribed to the within instrumen rized capacity(ies), and that by his/her/their signature(s) on the uted the instrument.
State of California th	at the foregoing paragraph is true and correct.
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U.S. Application No. 13/873,662; J	ones Day Docket No.: 1062	24-316-999	
STATE OF)	
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On	they executed the same in	his/her/their author	, Notary Public, personally appeared PHILIP PYE n(s) whose name(s) is subscribed to the within instrument and rized capacity(ies), and that by his/her/their signature(s) on the couted the instrument.
WITNESS my hand and official sea	1.		
Signature		(Seal)	
STATE OF NEW JERSEY)	
COUNTY OF)	
On	e that he/she/they executed the entity upon behalf of wh	the same in his/her/	, Notary Public, personally appeared WILLIAM WEI to be the person(s) whose name(s) is subscribed to the within their authorized capacity(ies), and that by his/her/their signature(sted, executed the instrument.
Signature		(Seal)	
STATE OF CALIFORNIA)	
COUNTY OF)	
On	ame in his/her/their authoriz	zed capacity(ies), and	, Notary Public, personally appeared JAN ELSNER , who is/are subscribed to the within instrument and acknowledged to that by his/her/their signature(s) on the instrument the person(s)
I certify under PENALTY OF PER	JURY under the laws of the	State of California	that the foregoing paragraph is true and correct.
WITNESS my hand and official sea	al.		
Signature		(Seal)	

U.S. Application No. 13/8/3,662; Jos	nes Day Docket No.: 10624-316-999	,
STATE OF PENNSYLVANIA)	
COUNTY OF)	
on the instrument the person(s), or the	before me. to me on the basis of satisfactory evidence that he/she/they executed the same in his/he e entity upon behalf of which the person(s) a	, Notary Public, personally appeared ANUSUYA ce to be the person(s) whose name(s) is subscribed to the within r/their authorized capacity(ies), and that by his/her/their signature(s) eted, executed the instrument.
WITNESS my hand and official seal.		
Signature	(Seal)	
ACCEPTED AND AGREED TO BY	ASSIGNEE, SIGNAL PHARMACEUTIC	CALS, LLC:
Signature .) · · · · ·	Date:
Printed name GREG REU	ies	
ride SR. VP Druc P	11 SCOVERU	

Doc code: Oath

Document Description: Oath or declaration filed

PTO/AIA/02 (07-13)

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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 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]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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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 ent or is currently submitted.	re inventive entity has been				
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, petitloners/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:					
Signal Pharmaceuticals, LLC Applicant Name:					
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):					
City SAW DIEGO: State CF Country USF Mailing Address of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent)					
Celaene.					
10300 campus Point Drive, Suite 100					
City SAN DUSD State CA Zip 9 2121	1- 1.46				
Note: Use an additional PTO/AIA/02 form for each inventor who is deceased, legally incapacitated, c	Country USH				

[Page 2 of 2]