

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5646753

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
DARRELL BAKER	07/23/2012
MARK BRUCE	07/16/2012
GLENN CRATER	07/26/2012
BRIAN NOGA	07/09/2012
MARIAN THOMAS	07/23/2012
PATRICK WIRE	08/06/2012
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	GLAXO GROUP LIMITED
<b>Street Address:</b>	980 GREAT WEST ROAD
<b>City:</b>	BRENTFORD, MIDDLESEX
<b>State/Country:</b>	ENGLAND
<b>Postal Code:</b>	TW8 9GS
<b>PROPERTY NUMBERS Total: 2</b>	
<b>Property Type</b>	<b>Number</b>
<b>Patent Number:</b>	9750726
<b>Application Number:</b>	15678246
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(610)917-6934
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	610-917-7817
<b>Email:</b>	US_CIPKOP@gsk.com
<b>Correspondent Name:</b>	GLAXOSMITHKLINE
<b>Address Line 1:</b>	1250 SOUTH COLLEGEVILLE ROAD
<b>Address Line 2:</b>	GLOBAL PATENTS UP4110
<b>Address Line 4:</b>	COLLEGEVILLE, PENNSYLVANIA 19426
<b>ATTORNEY DOCKET NUMBER:</b>	PB64030
<b>NAME OF SUBMITTER:</b>	LAURA MCCULLEN
<b>SIGNATURE:</b>	/Laura McCullen/
<b>DATE SIGNED:</b>	07/31/2019

PATENT

**Total Attachments: 18**

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## ASSIGNMENT

WHEREAS I/WE, **Darrell BAKER** a citizen of **United Kingdom of Uxbridge, Middlesex, GB**, **Mark BRUCE** a citizen of **United Kingdom of c/o Stevenage, Hertfordshire, GB** and **Marian THOMAS** a citizen of **United Kingdom of Ware, Hertfordshire, GB**, (hereinafter called "the inventor(s)") have invented or discovered certain improvements in **"COMBINATIONS OF A MUSCARINIC RECEPTOR ANTAGONIST AND A BETA-2 ADRENORECEPTOR AGONIST"** (hereinafter referred to as "the invention and improvements") for which priority application **0921075.8** was filed on **01 Dec 2009** in the **United Kingdom**, and for which a PCT international application **PCT/EP2010/068429** was filed on **29 Nov 2010**, designating the United States of America and naming assignor as inventor, and in the United States only applicant/inventor.

**WHEREAS** the invention and improvements, being made in the course of my employment, belong to my/our employer at that time, namely **GLAXOSMITHKLINE SERVICES UNLIMITED**, a company incorporated in England whose registered address is 980 Great West Road, Brentford, Middlesex TW8 9GS, England, and

**WHEREAS GLAXOSMITHKLINE SERVICES UNLIMITED** has authorised and requested our making the application, and

**WHEREAS GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED**, a company incorporated in England whose registered address is 980 Great West Road, Brentford, Middlesex TW8 9GS, England, is desirous of acquiring from **GLAXOSMITHKLINE SERVICES UNLIMITED** the whole right, title and interest in and to the invention and improvements and in and to the application, and

**WHEREAS GLAXO GROUP LIMITED** a company incorporated in England whose registered address is Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex, UB6 0NN, England, is desirous of acquiring the whole right, title and interest in and to the invention and improvements and in and to any applications for the invention and improvements and any Letters Patent to be obtained therefor, in all countries, including the United States of America, its territories and possessions;


**NOW, THEREFORE**, to all whom it may concern be it known that I/we, the inventor(s), hereby confirm the ownership by **GLAXOSMITHKLINE SERVICES UNLIMITED** of the invention and improvements and the application by operation of law and, if under the law of the United States of America I/we the inventor(s) have any ownership right, title and interest in and to the invention and improvements and the application, (which I/we do not believe to be the case and claim no ownership right, title or interest in and to the invention and improvements and to the application based on the law of the United Kingdom), I/we the inventor(s) nevertheless hereby assign and transfer such ownership right, title and interest in and to the invention and improvements and to the application, including the right to claim priority from the application in respect of any subsequent applications, to **GLAXOSMITHKLINE SERVICES UNLIMITED**. **GLAXOSMITHKLINE SERVICES UNLIMITED** in turn hereby assigns and transfers to **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** its whole right, title and interest in and to the invention and improvements and in and to the application.

**GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** in turn hereby assigns and transfers to **GLAXO GROUP LIMITED** its whole right, title and interest in all countries, including the United States of America, its territories and possessions in and to the invention and improvements and in and to the application including the right to claim priority from the application in respect of any subsequent applications, and in and to any divisional application, continuation or continuation in part application thereof, and in and to any Supplementary Protection Certificate, extension or re-issue thereof, and I/we the inventor(s) and **GLAXOSMITHKLINE SERVICES UNLIMITED** and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** hereby authorise and request any patent arising therefrom, in all countries, including the United States of America, its territories and possessions, be issued to **GLAXO GROUP LIMITED**;

**AND GLAXOSMITHKLINE SERVICES UNLIMITED** and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** hereby, and I/we the inventor(s) for myself/ourselves and my/our respective executors and legal representatives hereby, agree at the request and cost of **GLAXO GROUP LIMITED** to provide information and make execute and deliver any and all other instruments in writing, and any and all further acts, applications, papers, affidavits, assignments and other documents which may be possible and are necessary or desirable to more effectually secure to and vest in **GLAXO GROUP LIMITED**, its successors and assigns, the whole right, title and interest in and to

the invention and improvements and in and to the application hereby assigned and transferred in all countries, including the United States of America, its territories and possessions.


**IN WITNESS** whereof and with effect from the **01 Dec 2009**, the inventor(s) and the Attorney & Authorised Official of **GLAXOSMITHKLINE SERVICES UNLIMITED** and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** and **GLAXO GROUP LIMITED** by virtue of Powers of Attorney granted by **GLAXOSMITHKLINE SERVICES UNLIMITED** and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** and **GLAXO GROUP LIMITED** have hereunto set their respective hands.

Inventor Name	Signature	Date
Darrell BAKER:		23rd July 2012

Mark BRUCE: \_\_\_\_\_

Marian THOMAS: \_\_\_\_\_

**SIGNED** by Richard Lewis EASEMAN  
as the Attorney & Authorised Official of **GLAXOSMITHKLINE SERVICES UNLIMITED**  
and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** and **GLAXO GROUP LIMITED**:

  
Signature

16 AUG 2012  
Date: \_\_\_\_\_

## ASSIGNMENT

WHEREAS I/WE, **Darrell BAKER** a citizen of **United Kingdom of Uxbridge, Middlesex, GB**, **Mark BRUCE** a citizen of **United Kingdom of c/o Stevenage, Hertfordshire, GB** and **Marian THOMAS** a citizen of **United Kingdom of Ware, Hertfordshire, GB**, (hereinafter called "the inventor(s)") have invented or discovered certain improvements in "**COMBINATIONS OF A MUSCARINIC RECEPTOR ANTAGONIST AND A BETA-2 ADRENORECEPTOR AGONIST**" (hereinafter referred to as "the invention and improvements") for which priority application **0921075.8** was filed on **01 Dec 2009** in the **United Kingdom**, and for which a PCT international application **PCT/EP2010/068429** was filed on **29 Nov 2010**, designating the United States of America and naming assignor as inventor, and in the United States only applicant/inventor.

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**WHEREAS GLAXO GROUP LIMITED** a company incorporated in England whose registered address is Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex, UB6 0NN, England, is desirous of acquiring the whole right, title and interest in and to the invention and improvements and in and to any applications for the invention and improvements and any Letters Patent to be obtained therefor, in all countries, including the United States of America, its territories and possessions;

**NOW, THEREFORE**, to all whom it may concern be it known that I/we, the inventor(s), hereby confirm the ownership by **GLAXOSMITHKLINE SERVICES UNLIMITED** of the invention and improvements and the application by operation of law and, if under the law of the United States of America I/we the inventor(s) have any ownership right, title and interest in and to the invention and improvements and the application, (which I/we do not believe to be the case and claim no ownership right, title or interest in and to the invention and improvements and to the application based on the law of the United Kingdom), I/we the inventor(s) nevertheless hereby assign and transfer such ownership right, title and interest in and to the invention and improvements and to the application, including the right to claim priority from the application in respect of any subsequent applications, to **GLAXOSMITHKLINE SERVICES UNLIMITED**. **GLAXOSMITHKLINE SERVICES UNLIMITED** in turn hereby assigns and transfers to **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** its whole right, title and interest in and to the invention and improvements and in and to the application.

**GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** in turn hereby assigns and transfers to **GLAXO GROUP LIMITED** its whole right, title and interest in all countries, including the United States of America, its territories and possessions in and to the invention and improvements and in and to the application including the right to claim priority from the application in respect of any subsequent applications, and in and to any divisional application, continuation or continuation in part application thereof, and in and to any Supplementary Protection Certificate, extension or re-issue thereof, and I/we the inventor(s) and **GLAXOSMITHKLINE SERVICES UNLIMITED** and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** hereby authorise and request any patent arising therefrom, in all countries, including the United States of America, its territories and possessions, be issued to **GLAXO GROUP LIMITED**;

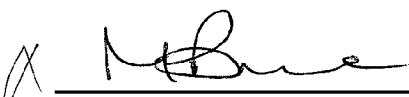
**AND GLAXOSMITHKLINE SERVICES UNLIMITED** and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** hereby, and I/we the inventor(s) for myself/ourselves and my/our respective executors and legal representatives hereby, agree at the request and cost of **GLAXO GROUP LIMITED** to provide information and make execute and deliver any and all other instruments in writing, and any and all further acts, applications, papers, affidavits, assignments and other documents which may be possible and are necessary or desirable to more effectually secure to and vest in **GLAXO GROUP LIMITED**, its successors and assigns, the whole right, title and interest in and to

the invention and improvements and in and to the application hereby assigned and transferred in all countries, including the United States of America, its territories and possessions.

**IN WITNESS** whereof and with effect from the **01 Dec 2009**, the inventor(s) and the Attorney & Authorised Official of **GLAXOSMITHKLINE SERVICES UNLIMITED** and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** and **GLAXO GROUP LIMITED** by virtue of Powers of Attorney granted by **GLAXOSMITHKLINE SERVICES UNLIMITED** and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** and **GLAXO GROUP LIMITED** have hereunto set their respective hands.


Inventor Name	Signature	Date
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Darrell BAKER:	<hr/>	
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Mark BRUCE:	<i>X</i> 	<i>X</i> 16 JUL 2012
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Marian THOMAS:	<hr/>	
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SIGNED by Richard Lewis EASEMAN  
as the Attorney & Authorised Official of **GLAXOSMITHKLINE SERVICES UNLIMITED**  
and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** and **GLAXO GROUP LIMITED**:

*X*   

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Signature

Date: 16 AUG 2012

## ASSIGNMENT

WHEREAS I/WE, **Glenn CRATER**, citizen of **United States** of **Mississauga, Ontario, CA**; **Brian NOGA**, citizen of **United States** of **c/o Durham, North Carolina, US**; and **Patrick WIRE**, citizen of **United States** of **Durham, North Carolina, US**, (hereinafter called "the inventor(s)") have invented or discovered certain improvements in "**COMBINATIONS OF A MUSCARINIC RECEPTOR ANTAGONIST AND A BETA-2 ADRENORECEPTOR AGONIST**" (hereinafter referred to as "the invention and improvements") for which priority application **0921075.8** was filed on **01 Dec 2009** in the **United Kingdom**, and for which a PCT international application **PCT/EP2010/068429** was filed on **29 Nov 2010**, designating the United States of America and naming assignor as inventor, and in the United States only applicant/inventor.

WHEREAS, **GLAXOSMITHKLINE LLC**, a company incorporated in the State of Delaware, USA, whose trading address is One Franklin Plaza, 200 North 16<sup>th</sup> Street, Philadelphia, PA 19102, USA, is desirous of acquiring the whole right, title and interest in and to said invention, and in and to any applications for said invention, including the right to claim priority, and in and to any Letters Patent to be obtained therefor, in all countries, including the United States, its territories and possessions, and

**WHEREAS GLAXO GROUP LIMITED** a company incorporated in England whose registered address is Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex, UB6 0NN, England, is desirous of acquiring from **GLAXOSMITHKLINE LLC** the whole right, title and interest in and to the invention and in and to any applications for the invention, including the right to claim priority, and in any Letters Patent to be obtained therefor, in all countries, including the United States of America, its territories and possessions;

NOW, THEREFORE, to all whom it may concern, be it known that I/we, **Glenn CRATER, Brian NOGA** and **Patrick WIRE**, for good and valuable consideration unto me/us moving, the receipt whereof is hereby acknowledged, have sold, assigned and transferred, and by these presents do sell, assign and transfer

my/our whole right, title and interest in and to said invention to said **GLAXOSMITHKLINE LLC**, throughout the United States of America, its territories and possessions, and in and to said application, and any extensions, reissues, continuations, continuations-in-part, and any divisions thereof, and in and to any and all Letters Patent of the United States of America, including any priority rights under the International Convention

AND, my/our whole right, title and interest in and to said invention to **GLAXOSMITHKLINE LLC**, in all other countries throughout the world, and in and to any applications in said other countries, and continuations-in-part, patents of addition, revalidation patents, patents of importation, registrations, and any renewals, extensions and divisions thereof, and in and to any and all Letters Patent of said all other countries which may be granted on said invention including any priority rights under the International Convention.

**GLAXOSMITHKLINE LLC** in turn hereby assigns and transfers to **GLAXO GROUP LIMITED** its whole right, title and interest in all countries, including the United States of America, its territories and possessions in and to the invention and in and to the application including the right to claim priority from the application in respect of any subsequent applications, and in and to any divisional application, continuation or continuation in part application thereof, and in and to any Supplementary Protection Certificate, extension or re-issue thereof, and I/we the inventor(s) and **GLAXOSMITHKLINE LLC** hereby authorise and request any patent arising therefrom, in all countries, including the United States of America, its territories and possessions, be issued to **GLAXO GROUP LIMITED**;

AND **GLAXOSMITHKLINE LLC** and I/we the inventor(s) for myself/ourselves and my/our respective executors and legal representatives hereby, agree at the request and cost of **GLAXO GROUP LIMITED** to provide information and make execute and deliver any and all other instruments in writing, and any and all further acts, applications, papers, affidavits, assignments and other documents which may be possible and are necessary or desirable to more effectually secure to and vest in **GLAXO GROUP LIMITED**, its successors and assigns, the whole right, title and interest in and to the invention and in and to the application hereby

assigned and transferred in all countries, including the United States of America, its territories and possessions.

**IN WITNESS** whereof and with effect from the **01 Dec 2009**, the inventor(s) and the Attorney & Authorised Official of **GLAXOSMITHKLINE LLC** and **GLAXO GROUP LIMITED** have hereunto set their respective hands.

Inventor Name	Signature	Date
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Glenn CRATER:



26/Jul/2012

Brian NOGA:

\_\_\_\_\_

Patrick WIRE:

\_\_\_\_\_

SIGNED by

Richard Lewis EASEMAN

as the Attorney & Authorised Official of **GLAXOSMITHKLINE LLC** and **GLAXO GROUP LIMITED**:



Signature

16 AUG 2012

Date:

\_\_\_\_\_

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NOW, THEREFORE, to all whom it may concern, be it known that I/we, **Glenn CRATER, Brian NOGA and Patrick WIRE**, for good and valuable consideration unto me/us moving, the receipt whereof is hereby acknowledged, have sold, assigned and transferred, and by these presents do sell, assign and transfer

my/our whole right, title and interest in and to said invention to said **GLAXOSMITHKLINE LLC**, throughout the United States of America, its territories and possessions, and in and to said application, and any extensions, reissues, continuations, continuations-in-part, and any divisions thereof, and in and to any and all Letters Patent of the United States of America, including any priority rights under the International Convention

AND, my/our whole right, title and interest in and to said invention to **GLAXOSMITHKLINE LLC**, in all other countries throughout the world, and in and to any applications in said other countries, and continuations-in-part, patents of addition, revalidation patents, patents of importation, registrations, and any renewals, extensions and divisions thereof, and in and to any and all Letters Patent of said all other countries which may be granted on said invention including any priority rights under the International Convention.

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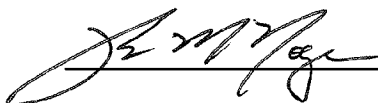
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Inventor Name	Signature	Date
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Glenn CRATER: \_\_\_\_\_

Brian NOGA: \_\_\_\_\_



09 July 2012

Patrick WIRE: \_\_\_\_\_

**SIGNED** by Richard Lewis EASEMAN  
as the Attorney & Authorised Official of **GLAXOSMITHKLINE LLC** and **GLAXO GROUP LIMITED**:



Signature

16 AUG 2012

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

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Inventor Name	Signature	Date
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Darrell BAKER: \_\_\_\_\_

Mark BRUCE: \_\_\_\_\_

Marian THOMAS: M. Thomas 23<sup>rd</sup> July 2012

**SIGNED** by Richard Lewis EASEMAN  
as the Attorney & Authorised Official of **GLAXOSMITHKLINE SERVICES UNLIMITED**  
and **GLAXOSMITHKLINE RESEARCH AND DEVELOPMENT LIMITED** and **GLAXO**  
**GROUP LIMITED:**

  
\_\_\_\_\_  
Signature

Date: 16 AUG 2012

## ASSIGNMENT

WHEREAS I/WE, **Glenn CRATER**, citizen of **United States** of **Mississauga, Ontario, CA**; **Brian NOGA**, citizen of **United States** of **c/o Durham, North Carolina, US**; and **Patrick WIRE**, citizen of **United States** of **Durham, North Carolina, US**, (hereinafter called "the inventor(s)") have invented or discovered certain improvements in "**COMBINATIONS OF A MUSCARINIC RECEPTOR ANTAGONIST AND A BETA-2 ADRENORECEPTOR AGONIST**" (hereinafter referred to as "the invention and improvements") for which priority application **0921075.8** was filed on **01 Dec 2009** in the **United Kingdom**, and for which a PCT international application **PCT/EP2010/068429** was filed on **29 Nov 2010**, designating the United States of America and naming assignor as inventor, and in the United States only applicant/inventor.

WHEREAS, **GLAXOSMITHKLINE LLC**, a company incorporated in the State of Delaware, USA, whose trading address is One Franklin Plaza, 200 North 16<sup>th</sup> Street, Philadelphia, PA 19102, USA, is desirous of acquiring the whole right, title and interest in and to said invention, and in and to any applications for said invention, including the right to claim priority, and in and to and any Letters Patent to be obtained therefor, in all countries, including the United States, its territories and possessions, and

WHEREAS **GLAXO GROUP LIMITED** a company incorporated in England whose registered address is Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex, UB6 0NN, England, is desirous of acquiring from **GLAXOSMITHKLINE LLC** the whole right, title and interest in and to the invention and in and to any applications for the invention, including the right to claim priority, and in any Letters Patent to be obtained therefor, in all countries, including the United States of America, its territories and possessions;

NOW, THEREFORE, to all whom it may concern, be it known that I/we, **Glenn CRATER, Brian NOGA** and **Patrick WIRE**, for good and valuable consideration unto me/us moving, the receipt whereof is hereby acknowledged, have sold, assigned and transferred, and by these presents do sell, assign and transfer

my/our whole right, title and interest in and to said invention to said **GLAXOSMITHKLINE LLC**, throughout the United States of America, its territories and possessions, and in and to said application, and any extensions, reissues, continuations, continuations-in-part, and any divisions thereof, and in and to any and all Letters Patent of the United States of America, including any priority rights under the International Convention

AND, my/our whole right, title and interest in and to said invention to **GLAXOSMITHKLINE LLC**, in all other countries throughout the world, and in and to any applications in said other countries, and continuations-in-part, patents of addition, revalidation patents, patents of importation, registrations, and any renewals, extensions and divisions thereof, and in and to any and all Letters Patent of said all other countries which may be granted on said invention including any priority rights under the International Convention.

**GLAXOSMITHKLINE LLC** in turn hereby assigns and transfers to **GLAXO GROUP LIMITED** its whole right, title and interest in all countries, including the United States of America, its territories and possessions in and to the invention and in and to the application including the right to claim priority from the application in respect of any subsequent applications, and in and to any divisional application, continuation or continuation in part application thereof, and in and to any Supplementary Protection Certificate, extension or re-issue thereof, and I/we the inventor(s) and **GLAXOSMITHKLINE LLC** hereby authorise and request any patent arising therefrom, in all countries, including the United States of America, its territories and possessions, be issued to **GLAXO GROUP LIMITED**;

AND **GLAXOSMITHKLINE LLC** and I/we the inventor(s) for myself/ourselves and my/our respective executors and legal representatives hereby, agree at the request and cost of **GLAXO GROUP LIMITED** to provide information and make execute and deliver any and all other instruments in writing, and any and all further acts, applications, papers, affidavits, assignments and other documents which may be possible and are necessary or desirable to more effectually secure to and vest in **GLAXO GROUP LIMITED**, its successors and assigns, the whole right, title and interest in and to the invention and in and to the application hereby

assigned and transferred in all countries, including the United States of America, its territories and possessions.

**IN WITNESS** whereof and with effect from the **01 Dec 2009**, the inventor(s) and the Attorney & Authorised Official of **GLAXOSMITHKLINE LLC** and **GLAXO GROUP LIMITED** have hereunto set their respective hands.

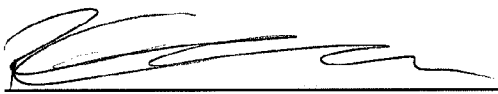
Inventor Name	Signature	Date
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Glenn CRATER:	_____	
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Brian NOGA:	_____	
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Patrick WIRE:		
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SIGNED by Richard Lewis EASEMAN.  
as the Attorney & Authorised Official of **GLAXOSMITHKLINE LLC** and **GLAXO GROUP LIMITED**:

X   
Signature

16 AUG 2012  
Date: \_\_\_\_\_