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PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
GURDIP BHALAY	09/01/2011
LEE EDWARDS	09/05/2011
CATHERINE HOWSHAM	08/22/2011
PETER HUNT	08/22/2011
NICHOLA SMITH	09/09/2011

RECEIVING PARTY DATA

Name:	NOVARTIS PHARMACEUTICALS UK LIMITED
Street Address:	FRIMLEY BUSINESS PARK
Internal Address:	FRIMLEY, CAMBERLEY
City:	SURREY
State/Country:	UNITED KINGDOM
Postal Code:	GU16 7SR

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13232175

CORRESPONDENCE DATA

Fax Number:

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.

Email: stephanie.geis@novartis.com

Correspondent Name: NIBR

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ATTORNEY DOCKET NUMBER:	PAT054352-US-NP
NAME OF SUBMITTER:	STEPHANIE GEIS
SIGNATURE:	/Stephanie Geis/
DATE SIGNED:	11/02/2016

Total Attachments: 5

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Patent Case PAT054352

ASSIGNMENT

This Assignment Agreement is entered into by and between

Gurdip BHALAY	citizen of United Kingdom	Novartis Pharmaceuticals UK Limited
		Wimblehurst Road
		Horsham, West Sussex RH12 5AB
		GB
Lee EDWARDS	citizen of United Kingdom	Novartis Pharmaceuticals UK Limited
		Wimblehurst Road
		Horsham, West Sussex RH12 5AB
		G8
Catherine HOWSHAM	citizen of United Kingdom	Novartis Pharmaceuticals UK Limited
		Wimblehurst Road
		Horsham, West Sussex RH12 5AB
		GB
Peter HUNT	citizen of United Kingdom	Novartis Pharmaceuticals UK Limited
		Wimblehurst Road
		Horsham, West Sussex RH12 5AB
		GB
Nichola SMITH	citizen of United Kingdom	Novartis Pharmaceuticals UK Limited
		Wimblehurst Road
		Horsham, West Sussex RH12 5AB
		GB

(hereinafter "Inventor(s)"), and **Novartis Pharmaceuticals UK Limited**, Frimley Business Park, Frimley, Camberley, Surrey GU16 7SR, UK, a company organized under the laws of Great Britain.

For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, I/We the Inventor(s) do hereby confirm and agree that, by operation of law and/or contract, and/or by the fulfillment of any and all legal requirements regarding the transfer of employee inventions in my/our country of employment, Novartis Pharmaceuticals UK Limited is the true and lawful owner of all right, title and interest in all inventions, discoveries, patents/utility models, applications, and rights described in paragraphs (1) through (8) below.

If, however, under the laws of any country, I/We the Inventor(s) nevertheless have any ownership right, title or interest in any of the items described herein (which I/We do not believe to be the case and make no claim in or to), for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, I/We the Inventor(s) do hereby sell, assign and

PATENT REEL: 040198 FRAME: 0343 transfer to Novartis Pharmaceuticals UK Limited and its successors, assigns and legal representatives (hereinafter referred to collectively as the "ASSIGNEE"), all of our right, title and interest for all countries of the world in and to

(1) all of our inventions and discoveries described in the provisional or non-provisional patent, utility model, or other application(s) entitled

Pyrazine Derivatives as ENaC Blockers [Patent Case PAT054352]

and filed in the	Office on	, 20 and accorded
Application Number	and/or filed as a	PCT International Application on
	, 20 and accorded International	Patent Application Number
PCT/	; and/or filed in the United S	tates Patent and Trademark Office
on September 17, 2010	and accorded Application Number 6	1/383,985;

- (2) the application(s) identified in paragraph (1), and all applications claiming priority from such application(s), directly or indirectly, including all national stages of any international patent application(s);
- (3) the right to file patent, utility model, or other applications on any invention or discovery disclosed in any of the applications identified in paragraphs (1) and (2), including the right to file such applications on said inventions and discoveries in the names of ASSIGNEE or their designees or in our/my name, at ASSIGNEE's election and in accordance with applicable law in all countries and regions; and the right to file all patent, utility model, or other applications in all countries and regions claiming the priority of any of the provisional or non-provisional application(s) identified in paragraphs (1) or (2);
- (4) all rights to claim priority from any of the applications referred to in paragraphs (1), (2), and (3) or from any application from which any of the applications referred to in paragraphs (1), (2) and (3) claim priority in all countries and regions under the Paris Convention for the Protection of Industrial Property, the WTO GATT TRIPS Agreement, the Inter-American Convention relating to Inventions, Patents, Designs, and Industrial Models and all other international agreements to which the United States now is or hereafter becomes a signatory and, if the United States patent application is a provisional patent application, under 35 USC 119(e);
- (5) all continuations, continuations-in-part, and divisionals of any United States patent application(s) or international patent application(s) designating the United States, any national stages of any international application(s), and any other patent application(s) described in paragraphs (1) through (4) hereof, including further continuations, continuations-in-part, and divisionals such as, but not limited to, continuations of continuations and continuations of divisionals:
- (6) all patents, utility models, or other grants that issue from any of the applications referred to herein and all rights and remedies associated therewith including the right to sue for and recover past damages and to recover under 35 U.S.C. § 154 (d) or any other law permitting remedies for infringement prior to issuance of the patent;

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- (7) all registrations and confirmations of, and importation certificates based upon, one or more of said patents, utility models, or other grants, and applications for such registrations, confirmations and importation certificates and;
- (8) all reissues, renewals and extensions of said patents, utility models, registrations, confirmations and importation certificates, reexamination certificates issued for said patents and supplementary protection certificates based upon said patents and applications for such reissues, renewals, extensions, reexamination certificates and supplementary protection certificates, the same to be held and enjoyed by said ASSIGNEE to the full ends of the terms for which said patents, utility models, registrations, confirmations, importation certificates, reexamination certificates, supplementary protection certificates, reissues, renewals and extensions may be granted, as fully and entirely as the same would have been held and enjoyed by me/us if this sale, assignment and transfer had not been made.

I/We the Inventor(s) hereby authorize ASSIGNEE and their representatives to insert in paragraph (1) of this Assignment the filing date(s) and Application Number(s) of said patent, utility model, or other application(s) when notified thereof.

I/We the Inventor(s) hereby covenant and agree that I/We will, at any time, (i) upon the request, but at the expense, of ASSIGNEE, execute and deliver all documents that may be necessary or desirable to perfect the title to the foregoing inventions and discoveries, applications, patents, utility models, registrations, confirmations, importation certificates, reissues, renewals, extensions, reexamination certificates, supplementary protection certificates, and applications within the scope of (7) and (8), in ASSIGNEE, including the execution and procurement of all further documents evidencing this sale, assignment and transfer as may be necessary or desirable for recording the same in the patent office or other intellectual property office, agency or the like of any country or region, (ii) upon the request, but at the expense, of ASSIGNEE execute all additional applications within the scope of paragraphs (1) through (6) and all applications within the scope of (7) or (8), and (iii) make all rightful oaths and declarations and do all lawful acts requisite for procuring the same or for aiding therein, without further compensation, but at the expense of ASSIGNEE.

Should any provision of this Assignment be deemed invalid or unenforceable by reason of any law, statute, regulation or judgment, existing now or in the future in any jurisdiction, such provision shall be modified in such jurisdiction so as to nearly approximate the intent of the Parties. If this cannot be done, such invalid or unenforceable provision shall be divisible and be deleted in any such jurisdiction, and all other provisions shall remain in full force and effect. The modification or deletion of any provision in one jurisdiction shall have no effect on this Assignment in any other jurisdiction.

This Assignment is effective as from the earliest priority date as stated above.

Executed this i day of SECTEMBER	20 11 .
Gurdip BHALAY	Ŀ.S.
Executed this day of 52P7EHBER. Lee EDWARDS	
Executed this 22 day of AucuST A D I Catherine HOWSHAM	
Executed this 22 day of AUGUSSY Peter HUNT	, 20 <u>11</u> . .s.
Executed this on day of SEPTEMME/ AJUK SAUL I Nichola SMITH	<u>2</u> ,20 <u>11</u> .
Executed this 15th day of September Novartis Pharmaceuticals UK Limited	
SY Construction Name: Fitle: Elena S. Brugnera Authorized signatory	L.S. <u>E. Rudolon</u> Ella Rutschmann Authorized signatory

ATTESTATION

I, the undersigned Civil Law Notary in Basel, Switzerland, Dr. Matthias Staehelin, certify herewith that the signatures attached heretofore are the genuine signatures of **Mr. Gurdip Bhalay**, born on 15th (fifteenth) day of August 1968 (nineteen hundred sixty-eight), British citizen, with business address at Wimblehurst Road, Horsham, West Sussex RH12 5AB, Great Britain; and of **Mr. Lee Edwards**, born on 3rd (third) day of June 1974 (nineteen hundred seventy-four), British citizen, with business address at Wimblehurst Road, Horsham, West Sussex RH12 5AB, Great Britain; and of **Ms. Catherine Howsham**, born on 8th (eighth) day of July 1975 (nineteen hundred seventy-five), British citizen, with business address at Wimblehurst Road, Horsham, West Sussex RH12 5AB, Great Britain; and of **Mr. Peter Hunt,** born on 8th (eighth) day of August 1965 (nineteen hundred sixty-five), British citizen, with business address at Wimblehurst Road, Horsham, West Sussex RH12 5AB, Great Britain; and of **Ms. Nichola Smith**, born on 13th (thirteenth) day of November 1973 (nineteen hundred seventy-three), British citizen, with business address at Wimblehurst Road, Horsham, West Sussex RH12 5AB, Great Britain.

Further I certify herewith that the above signatures are the genuine signatures of Ms. Ella Rutschmann, citizen of Lotzwil, Switzerland, residing in Basel, Switzerland; and of Ms. Elena Sona Brugnera, Indian citizen, residing in Regensdorf, Switzerland; both acting for Novartis Pharmaceuticals UK Limited, in, Frimley, Camberley, Surrey, United Kingdom, both as proxy holders, both with single signature.

The authenticity of the signatures was established by means of comparison.

BASEL, Switzerland, this 10th (tenth) day of November 2011 (two thousand and eleven)

Dr. M. Staehelin

Leg.Prot.Nr. 2221 /2011

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RECORDED: 11/02/2016