

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
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EPAS ID: PAT5213124

<b>SUBMISSION TYPE:</b>	CORRECTIVE ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	Corrective Assignment to correct the APPLICATION SERIAL NUMBER OF THE ASSIGNMENT PREVIOUSLY RECORDED ON REEL 046474 FRAME 0985 FROM 14961531 TO 15961531 previously recorded on Reel 046474 Frame 0985. Assignor(s) hereby confirms the APPLICATION SERIAL NUMBER SHOULD BE CORRECTED FROM 14961531 TO 15961531.
<b>RESUBMIT DOCUMENT ID:</b>	505065335

**CONVEYING PARTY DATA**

Name	Execution Date
NOVARTIS INTERNATIONAL PHARMACEUTICAL AG	04/12/2017

**RECEIVING PARTY DATA**

<b>Name:</b>	NOVARTIS AG
<b>Street Address:</b>	LICHTSTRASSE 35
<b>City:</b>	BASEL
<b>State/Country:</b>	SWITZERLAND
<b>Postal Code:</b>	4056

**PROPERTY NUMBERS Total: 1**

Property Type	Number
<b>Application Number:</b>	15961531

**CORRESPONDENCE DATA**

**Fax Number:** (858)332-4528  
*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.*

**Phone:** 858-812-1617  
**Email:** ssesnovich@gnf.org  
**Correspondent Name:** DANIEL E. RAYMOND  
**Address Line 1:** 10675 JOHN JAY HOPKINS DRIVE  
**Address Line 4:** SAN DIEGO, CALIFORNIA 92121

<b>ATTORNEY DOCKET NUMBER:</b>	PAT056047-US-CNT
<b>NAME OF SUBMITTER:</b>	DANIEL E. RAYMOND
<b>SIGNATURE:</b>	/Daniel E. Raymond/
<b>DATE SIGNED:</b>	10/30/2018

**Total Attachments: 9**

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>SEQUENCE:</b>	5
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
NOVARTIS INTERNATIONAL PHARMACEUTICAL AG	04/12/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	NOVARTIS AG
<b>Street Address:</b>	LICHTSTRASSE 35
<b>City:</b>	BASEL
<b>State/Country:</b>	SWITZERLAND
<b>Postal Code:</b>	4056
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	14961531
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(858)332-4528
<b>Phone:</b>	858-812-1617
<b>Email:</b>	ssesnovich@gnf.org
<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>Correspondent Name:</b>	DANIEL E. RAYMOND, PH.D.
<b>Address Line 1:</b>	10675 JOHN JAY HOPKINS DRIVE
<b>Address Line 4:</b>	SAN DIEGO, CALIFORNIA 92121
<b>ATTORNEY DOCKET NUMBER:</b>	PAT056047-US-CNT
<b>NAME OF SUBMITTER:</b>	DANIEL E. RAYMOND
<b>Signature:</b>	/Daniel E. Raymond/
<b>Date:</b>	07/26/2018

**PATENT**

**REEL: 047719 FRAME: 0867**

**Total Attachments: 5**

source=20170412 Confirmatory Assignment#page1.tif

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**RECEIPT INFORMATION****EPAS ID:** PAT5069641**Receipt Date:** 07/26/2018**PATENT**

## AMENDED CONFIRMATORY PATENT ASSIGNMENT

This AMENDED confirmatory PATENT ASSIGNMENT is dated April 12, 2017, and entered into by and between Novartis International Pharmaceutical AG, a company organized under the laws of Switzerland having a place of business at Lichtstrasse 35, 4056 Basel, Switzerland (“**Assignor**”) and Novartis AG, a corporation organized under the laws of Switzerland having a place of business at Lichtstrasse 35, 4056 Basel, Switzerland (“**Assignee**”). Assignor and Assignee are collectively referred to herein as the “**Parties.**”

WHEREAS, as of January 5, 2015, Novartis International Pharmaceutical Ltd., a company organized under the laws of Bermuda having a place of business at 131 Front Street, Hamilton, HM 12, Bermuda (hereafter referred to as “NIP Ltd.”), merged with IRM LLC, a limited liability company incorporated in the State of Delaware, whose address is 131 Front Street, Hamilton, HM 12, Bermuda, as evidenced by a copy of the relevant certificate of merger attached as **Schedule A** hereto; thereby becoming owner and successor-in-interest by merger to the patent rights of patent applications in the name of IRM LLC listed in **Schedule B** attached hereto, and associated rights.

WHEREAS, pursuant to the Patent Assignment between NIP Ltd. and Assignee dated February 19, 2015 (the “Assignment”) but deemed to have an effect on January 5, 2015 (the “Effective Date”), NIP Ltd. assigned to Assignee, and Assignee acquired from NIP Ltd., NIP Ltd’s title in and to the patent rights listed in **Schedule B** attached hereto.

WHEREAS, as of November 3, 2016, NIP Ltd. transferred to Switzerland as Novartis International Pharmaceutical AG.

WHEREAS, the Confirmatory Patent Assignment dated March 7, 2017 (“Confirmatory Assignment”), entered into by and between NIP Ltd. and Assignee did not correctly state the Parties.

NOW, THEREFORE, the Parties agree as follows:

1. Assignor hereby confirms having sold, transferred, conveyed, assigned, and delivered to Assignee, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the title Assignor held, or may come to hold, in and to (i) the patent rights listed in **Schedule B** hereto, (ii) all reissues, divisions, continuations, extensions, renewals, reexaminations, national registrations and foreign counterparts of the foregoing, and (iii) all supplemental protection certificates and patent term extensions relying on or connected to any of the foregoing, (the foregoing (i), (ii) and (iii) comprising the “**Assigned Patents**”) and (iv) all right as title holder to claim priority from any of the Assigned Patents and (v) all right as title holder to sue at law or in equity for any past, present, and future infringement, abuse, misappropriation, violation, or other impairment thereof of the Assigned Patents.
2. Assignee hereby confirms having accepted such title.

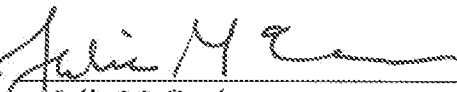
3. The Parties hereby request and authorize the authority at the relevant national patent office to record Assignee as the recorded holder of title, legal owner, registered owner, assignee, and/or applicant, as the case may be, of the Assigned Patents.

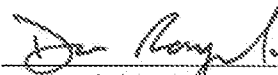
IN WITNESS WHEREOF, the Parties hereto have caused this Confirmatory Assignment to be executed on this 12th day of April 2017.


Agreed and accepted by:


NOVARTIS INTERNATIONAL  
PHARMACEUTICAL AG

NOVARTIS AG

By:   
Name: Julie McCarthy  
Title: Authorized Signatory

By:   
Name: Daniel E. Raymond  
Title: Authorized Signatory

By:   
Name: Emily T. Wu  
Title: Authorized Signatory

By:   
Name: Chihang Amy Smith  
Title: Authorized Signatory

WITNESS to NOVARTIS  
INTERNATIONAL PHARMACEUTICAL  
AG

WITNESS to NOVARTIS AG

By:   
Witness Name: Geraldine Rochino

By:   
Witness Name: Geraldine Rochino

By:   
Witness Name: Susan Sesnovich

By:   
Witness Name: Susan Sesnovich

**Schedule A**  
**(Copy of Certificate of Merger on following page)**



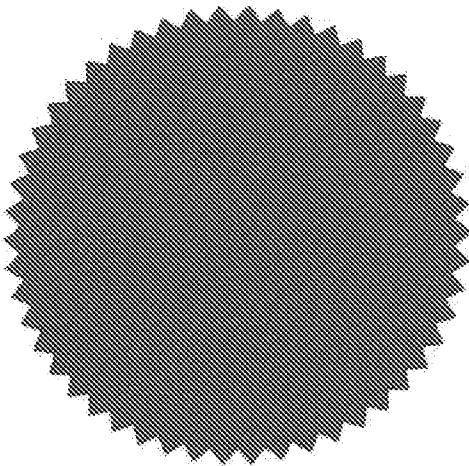
**BERMUDA  
CERTIFICATE OF MERGER**

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In accordance with the provisions of Section 108 of the Companies Act, 1981 ("Act"), I  
**HEREBY** issue this Certificate of Merger to the surviving company bearing the name

**Novartis International Pharmaceutical Ltd.**

consequent upon the merger of IRM, LLC (a Delaware Limited Liability Company) and  
Novartis International Pharmaceutical Ltd. effective the 5<sup>th</sup> day of January 2015.



Given under my hand and the Seal of  
the REGISTRAR OF COMPANIES  
this 5<sup>th</sup> day of January 2015

A handwritten signature in dark ink is written over the printed name of the Registrar of Companies.

for Registrar of Companies



**Schedule B**

<b>Case reference</b>	<b>Filing Number</b>	<b>Filing Date</b>
PAT056151-US-PCT	15/124606	11 Mar 2015
PAT054412-US-DIV	14/676863	02 Apr 2015
PAT053774-US-CNT	14/696165	24 Apr 2015
PAT056239-US-PCT	15/307525	29 Apr 2015
PAT056238-US-PCT	15/307510	29 Apr 2015
PAT055898-US-PCT	15/317532	11 Jun 2015
PAT056353-US-PCT	15/329818	27 Jul 2015
PAT056269-US-PCT02	15/500870	03 Aug 2015
PAT054235-US-DIV	14/859126	18 Sep 2015
PAT053614-US-PCTD02	14/962432	08 Dec 2015
PAT053669-US-DIV02	14/978059	22 Dec 2015
PAT055930-US-DIV	15/051446	23 Feb 2016
PAT055625-US-DIV	15/052029	24 Feb 2016
PAT055625-US-CNT	15/212702	18 Jul 2016
PAT054788-US-CNT02	15/220149	26 Jul 2016
PAT055493-US-DIV	15/346026	08 Nov 2016
PAT054993-US-PCTD	15/385088	20 Dec 2016
PAT055142-US-DIV	15/403145	10 Jan 2017
PAT052976-US-DIV02	15/409292	18 Jan 2017
PAT055853-US-PCT	14/910590	05 Aug 2014
PAT055829-US-PCT02	15/034280	04 Nov 2014
PAT056047-US-PCT	15/104727	17 Dec 2014

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EPAS ID: PAT5112091

<b>SUBMISSION TYPE:</b> CORRECTIVE ASSIGNMENT	
<b>NATURE OF CONVEYANCE:</b> Corrective Assignment to correct the APPLICATION SERIAL NUMBER OF THE ASSIGNMENT TO 15961531 previously recorded on Reel 046474 Frame 0985. Assignor(s) hereby confirms the ASSIGNMENT FROM NOVARTIS INTERNATIONAL PHARMACEUTICAL AG TO NOVARTIS AG SHOULD BEAR THE SERIAL NO. 15961531.	
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
NOVARTIS INTERNATIONAL PHARMACEUTICAL AG	04/12/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	NOVARTIS AG
<b>Street Address:</b>	LICHTSTRASSE 35
<b>City:</b>	BASEL
<b>State/Country:</b>	SWITZERLAND
<b>Postal Code:</b>	4056
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15961531
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(858)332-4528
<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>	858-812-1617
<b>Email:</b>	ssesnovich@gntf.org
<b>Correspondent Name:</b>	DANIEL E. RAYMOND
<b>Address Line 1:</b>	10675 JOHN JAY HOPKINS DRIVE
<b>Address Line 4:</b>	SAN DIEGO, CALIFORNIA 92121
<b>ATTORNEY DOCKET NUMBER:</b>	PAT056047-US-CNT
<b>NAME OF SUBMITTER:</b>	DANIEL E. RAYMOND
<b>SIGNATURE:</b>	/Daniel E. Raymond/
<b>DATE SIGNED:</b>	08/27/2018
<b>Total Attachments: 7</b>	
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