

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4347062

|                              |                |
|------------------------------|----------------|
| <b>SUBMISSION TYPE:</b>      | NEW ASSIGNMENT |
| <b>NATURE OF CONVEYANCE:</b> | ASSIGNMENT     |
| <b>SEQUENCE:</b>             | 4              |

**CONVEYING PARTY DATA**

| Name                                       | Execution Date |
|--|----------------|
| NOVARTIS INTERNATIONAL PHARMACEUTICAL LTD. | 03/07/2017     |

**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> | 15307525 |

**CORRESPONDENCE DATA****Fax Number:** (858)332-4366*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, PH.D.**Address Line 1:** 10675 JOHN JAY HOPKINS DRIVE**Address Line 4:** SAN DIEGO, CALIFORNIA 92121

|                                |                     |
|--------------------------------|---------------------|
| <b>ATTORNEY DOCKET NUMBER:</b> | PAT056239-US-PCT    |
| <b>NAME OF SUBMITTER:</b>      | DANIEL E. RAYMOND   |
| <b>SIGNATURE:</b>              | /Daniel E. Raymond/ |
| <b>DATE SIGNED:</b>            | 03/31/2017          |

**Total Attachments: 5**

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## CONFIRMATORY PATENT ASSIGNMENT

This confirmatory PATENT ASSIGNMENT ("**Confirmatory Assignment**") is dated March 7, 2017, and entered into by and between 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 ("**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, Assignor 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 Assignor and Assignee dated February 19, 2015 (the "**Assignment**") but deemed to have an effect on January 5, 2015 (the "**Effective Date**"), the Assignor assigned to Assignee, and Assignee acquired from Assignor, the Assignor's title in and to the patent rights listed in **Schedule B** attached hereto.

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.

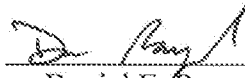
IN WITNESS WHEREOF, the Parties hereto have caused this Confirmatory Assignment to be executed on this 7<sup>th</sup> day of March, 2017.

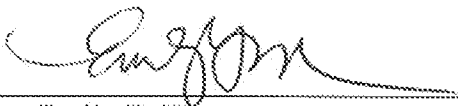
Agreed and accepted by:


NOVARTIS INTERNATIONAL  
PHARMACEUTICAL LTD.

NOVARTIS AG

By:   
Name: Chihang Amy Smith  
Title: Authorized Signatory

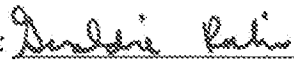
By:   
Name: Daniel E. Raymond  
Title: Authorized Signatory


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

By:   
Name: Michael G. Smith  
Title: Authorized Signatory

WITNESS to NOVARTIS  
INTERNATIONAL PHARMACEUTICAL  
LTD.

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)**



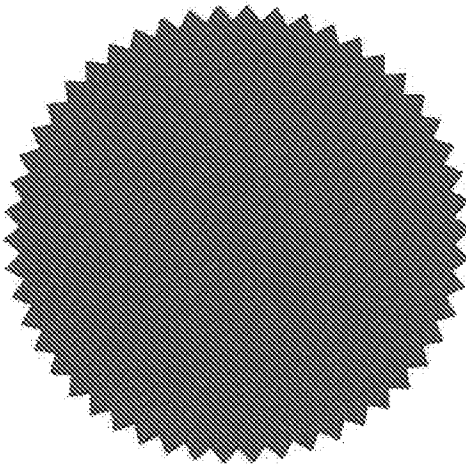
**BERMUDA  
CERTIFICATE OF MERGER**

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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 text of the Registrar's name.

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        |