

PATENT ASSIGNMENT

Electronic Version v1.1
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| SUBMISSION TYPE: | NEW ASSIGNMENT | | | | | | | | | | |
|---|---------------------|---------------|----------------|------------------------------|-----------------|-------------------|------------|----------------|-------------|--------------|---------|
| NATURE OF CONVEYANCE: | ASSIGNMENT | | | | | | | | | | |
| CONVEYING PARTY DATA | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Wolfgang Ernst Gustav BUDACH</td> <td>04/15/2011</td> </tr> <tr> <td>Helene C. CHASSIN</td> <td>04/18/2011</td> </tr> <tr> <td>Kerstin DORSCH</td> <td>04/15/2011</td> </tr> </tbody> </table> | | Name | Execution Date | Wolfgang Ernst Gustav BUDACH | 04/15/2011 | Helene C. CHASSIN | 04/18/2011 | Kerstin DORSCH | 04/15/2011 | | |
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| Wolfgang Ernst Gustav BUDACH | 04/15/2011 | | | | | | | | | | |
| Helene C. CHASSIN | 04/18/2011 | | | | | | | | | | |
| Kerstin DORSCH | 04/15/2011 | | | | | | | | | | |
| RECEIVING PARTY DATA | | | | | | | | | | | |
| <table border="1"> <tr> <td>Name:</td> <td>Novartis AG</td> </tr> <tr> <td>Street Address:</td> <td>Lichtstrasse 35</td> </tr> <tr> <td>City:</td> <td>Basel</td> </tr> <tr> <td>State/Country:</td> <td>SWITZERLAND</td> </tr> <tr> <td>Postal Code:</td> <td>CH-4056</td> </tr> </table> | | Name: | Novartis AG | Street Address: | Lichtstrasse 35 | City: | Basel | State/Country: | SWITZERLAND | Postal Code: | CH-4056 |
| Name: | Novartis AG | | | | | | | | | | |
| Street Address: | Lichtstrasse 35 | | | | | | | | | | |
| City: | Basel | | | | | | | | | | |
| State/Country: | SWITZERLAND | | | | | | | | | | |
| Postal Code: | CH-4056 | | | | | | | | | | |
| PROPERTY NUMBERS Total: 1 | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13695002</td> </tr> </tbody> </table> | | Property Type | Number | Application Number: | 13695002 | | | | | | |
| Property Type | Number | | | | | | | | | | |
| Application Number: | 13695002 | | | | | | | | | | |
| CORRESPONDENCE DATA | | | | | | | | | | | |
| <p>Fax Number: 4152687522 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i></p> <p>Phone: 415.268.6846 Email: arianasanchez@mofo.com Correspondent Name: Otis B. Littlefield Address Line 1: MORRISON & FOERSTER LLP Address Line 2: 425 Market Street Address Line 4: San Francisco, CALIFORNIA 94105</p> | | | | | | | | | | | |
| ATTORNEY DOCKET NUMBER: | 699962000300 | | | | | | | | | | |
| NAME OF SUBMITTER: | Otis B. Littlefield | | | | | | | | | | |
| <p>Total Attachments: 5 source=6999962000300 -- ASMT#page1.tif source=6999962000300 -- ASMT#page2.tif source=6999962000300 -- ASMT#page3.tif source=6999962000300 -- ASMT#page4.tif source=6999962000300 -- ASMT#page5.tif</p> | | | | | | | | | | | |

CH \$40.00 13695002

(joint)

Patent Case PAT053993

ASSIGNMENT

For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, we

(1) **Wolfgang Ernst Gustav Budach**, (2) **Helene C. Chassin**, (3) **Kerstin Dorsch**,

respectively residing at

(1) **Novartis Pharma AG**

Postfach

4002 Basel

SWITZERLAND,

(2) **Fatiostrasse 29**

4056 Basel

SWITZERLAND,

(3) **Novartis Pharma AG**

Postfach

4002 Basel

SWITZERLAND,

do hereby sell, assign and transfer to Novartis AG, a company organized under the laws of the Swiss Confederation, of Lichtstrasse 35, 4056 Basel, Switzerland, (hereinafter referred to as the "**ASSIGNEE**") and its successors, assigns and legal representatives, all of my right, title and interest for all countries of the world in and to (1) all of my inventions and discoveries described in the patent application(s) titled

IMPROVED CELL CULTURE MEDIUM

and filed in the United States Patent and Trademark Office on 26 April 2010 and accorded Application Number 61/327837* and/or filed in the RO/ on April 25, 2011 and accorded International Patent Application Number PCT/ EP2011/056509*, (2) the patent application(s) identified in (1), (3) all national stages of any international patent application identified in (1), (4) all other patent applications in all countries and regions claiming the priority of the provisional or non-provisional patent application filed in the United States Patent and Trademark Office on October 26, 2012 and accorded Application Number 13/695,002, (5) for all patent applications, all rights of priority based upon the United States patent application identified in (4) in all countries and regions under the Paris Convention for the Protection of Industrial Property, 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 identified in (4) is a provisional patent application, under 35 USC 119(e) (including the right to file patent applications on said inventions and discoveries in the names of **ASSIGNEE** or their designees or in our names, at their election and in accordance with applicable law in all countries and regions), (6) all continuations and divisions of any United States patent application or international patent application designating the United States identified in (1), any national stages of any international application identified in (1) and any patent applications within the scope of (4) (including further continuations and divisions such as, but not limited to, continuations of continuations and continuations of divisions), ((2)-(4) and (6) hereinafter referred to collectively as "patent applications"), (7) all patents that are granted on any of said patent applications, (8) all registrations and confirmations of, and importation certificates based upon, one or more of said patents and applications for such registrations, confirmations and importation certificates and (9) all reissues, renewals and extensions of said patents, 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** and their successors, assigns and legal representatives to the full ends of the terms for which said patents, registrations, confirmations, importation certificates, reexamination certificates,

PATENT

REEL: 029581 FRAME: 0583

supplementary protection certificates, reissues, renewals and extensions may be granted, as fully and entirely as the same would have been held and enjoyed by us if this sale, assignment and transfer had not been made.

*We hereby authorize **ASSIGNEE** and their representatives to insert in this Assignment the filing date(s) and Application Number(s) of said patent application(s) when notified thereof.

And we hereby covenant and agree that we will, at any time, (i) upon the request, but at the expense, of **ASSIGNEE** or their successors, assigns or legal representatives execute and deliver all documents that may be necessary or desirable to perfect the title to the foregoing inventions and discoveries, patent applications, patents, registrations, confirmations, importation certificates, reissues, renewals, extensions, reexamination certificates, supplementary protection certificates and applications within the scope of (8) and (9) in **ASSIGNEE** or their successors, assigns or legal representatives, 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** or their successors, assigns or legal representatives execute all additional patent applications within the scope of (3), (4) and (6) and all applications within the scope of (8) or (9) 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** or their successors, assigns or legal representatives.

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

Executed this 15 day of April, 2011

Wolfgang Ernst Gustav Budach L.S.
Wolfgang Ernst Gustav Budach

ACKNOWLEDGEMENT


State of _____)
) s.s.:
County of _____)

On this _____ day of _____, 20____, personally appeared before me _____ to me known and known by me to be the same person described in and who executed the foregoing Assignment and acknowledged that (s)he executed the same of his (her) own free will for the purpose set forth.

(Seal)

Notary Public

Executed this 18 day of April, 2011

 L.S.
Helene C. Chassin

ACKNOWLEDGEMENT


State of _____)
) S.S.
County of _____)

On this _____ day of _____, 20____, personally appeared before me _____ to me known and known by me to be the same person described in and who executed the foregoing Assignment and acknowledged that (s)he executed the same of his (her) own free will for the purpose set forth.

(Seal)

Notary Public

Executed this 15 day of April, 2011

 L.S.
Kerstin Dorsch

ACKNOWLEDGEMENT

State of _____)
) s.s.
County of _____)

On this _____ day of _____, 20____, personally appeared before me _____ to me known and known by me to be the same person described in and who executed the foregoing Assignment and acknowledged that (s)he executed the same of his (her) own free will for the purpose set forth.

(Seal)

Notary Public

ACCEPTANCE OF ASSIGNMENT

With reference to the Assignment to **NOVARTIS AG** of an invention entitled "IMPROVED CELL CULTURE MEDIUM" signed by Wolfgang Ernst Gustav Budach, Helene C. Chassin and Kerstin Dorsch; this will certify that **NOVARTIS AG** accepts such Assignment.

NOVARTIS AG

By :

Name :

Function :

Date :

J. Violet Mentel

June Violet Mentel

Duly Authorized Signatories

13 April 2011

S. Bösch

Sonja Bösch

ATTESTATION

I, the undersigned Civil Law Notary in Basel, Switzerland, lic.iur. Marius Meier, certify herewith that the signatures attached heretofore are the genuine signatures of **Mr. Wolfgang Ernst Gustav Budach**, German citizen, residing in Schliengen, Germany; of **Ms. Hélène Chassin**, citizen of Basel, Switzerland, residing in Basel, Switzerland; and of **Ms. Kerstin Dorsch**, German citizen, residing in Riehen, Switzerland.

I further certify that the signatures attached heretofore are the genuine signatures of **Ms. June Violet Mentel**, citizen of Grenchen/SO, Switzerland, residing in Arlesheim, Switzerland, and of **Ms. Sonja Bösch**, German citizen, residing in Pfaffenweiler, Germany, both acting for **Novartis AG**, in Basel, Switzerland, both as proxy holders, both with joint signature.

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

BASEL, Switzerland, this 16th (sixteenth) day of August 2011 (two thousand and eleven)

Leg.Prot.Nr. 1040 /2011

M. Meier
Notar