

PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| Novartis Vaccines and Diagnostics, Inc. | 02/19/2009 |
| RECEIVING PARTY DATA | |
| Name: | Novartis AG |
| Street Address: | Lichstrasse, 35 |
| City: | Basel |
| State/Country: | SWITZERLAND |
| Postal Code: | CH-4056 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 11833726 |
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| ATTORNEY DOCKET NUMBER: | 27527/41965A |
| NAME OF SUBMITTER: | Eric M. Brusca |
| Total Attachments: 3 source=ag#page1.tif source=ag#page2.tif source=ag#page3.tif | |

OP \$40.00 11833726

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PATENT
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ASSIGNMENT

WHEREAS, we, Novartis Vaccines and Diagnostics, Inc., hereinafter referred to as ASSIGNORS, have invented certain new and useful improvements incorporated in a patent application;

WHEREAS, NOVARTIS AG, Lichstrasse, 35, Basel, Switzerland CH-4056, hereinafter referred to as ASSIGNEE, is desirous of acquiring the entire right, title and interest or improvements of the undersigned disclosed in an application for letters patent of the United States, and in said application and any and all other applications, both in the United States and in other countries, which the undersigned may file or be named as an inventor, either solely or jointly with others, on said invention or improvements, and the right to claim priority benefit of said applications, and in any and all letters patent of the United States and other countries, which may be obtained on any of said applications, and in any reissue or extension thereof;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that, for and in consideration of the sum of One Dollar (\$1.00) lawful money paid to ASSIGNORS by ASSIGNEE, receipt of which is hereby acknowledge, ASSIGNORS have sold, assigned and transferred, and by these presents do sell, assign and transfer unto said ASSIGNEE, and ASSIGNEES' successors and assigns, all right, title and interest in and to the said invention, said foreign patent applications including but not limited to the applications set forth in Schedule A, and any Letters Patent which may hereafter be granted on the same, including any divisions, renewals, continuations in whole or in part, substitutions, conversions, reissues, prolongations or extensions thereof, the said interest to be hold and enjoyed by said ASSIGNEE as fully and exclusively as it would have been held and enjoyed by said ASSIGNORS had this assignment and transfer not been made, to the full end and term of any Letters Patent.

ASSIGNORS further agree that they will, without charge to said ASSIGNEE, but at ASSIGNEE's expense, cooperate with ASSIGNEE in the prosecution of said application and/or applications, execute, verify, acknowledge and deliver all such further papers, including applications for Letters Patent and for the reissue thereof, and instruments of assignment and transfer thereof, and will perform such other acts as ASSIGNEE lawfully may request, to obtain or maintain Letters Patent for said invention and improvement in any and all countries, and to vest title thereto in said ASSIGNEE, or ASSIGNEE's successors and assigns.

IN TESTIMONY WHEREOF, ASSIGNORS have hereunto signed their names to this assignment on the dates indicated below.

2/19/09
Date

Lisa Alexander
Novartis Vaccines and Diagnostics, Inc.
Lisa Alexander, Assistant Secretary

SCHEDULE A

| Country | Application No. | Filing Date | Reference No. |
|---------------|---------------------------------------|-------------|--------------------------------|
| Australia | National Phase of PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-AU-PCT) |
| Brazil | National Phase of PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-BR-PCT) |
| Canada | National Phase of PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-CA-PCT) |
| China | National Phase of PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-CN-PCT) |
| EPO | National Phase of PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-EP-PCT) |
| India | National Phase of PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-IN-PCT) |
| Japan | National Phase of PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-JP-PCT) |
| Korea | National Phase of PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-KR-PCT) |
| Mexico | National Phase of PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-MX-PCT) |
| PCT | PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-AU-PCT) |
| Russia | National Phase of PCT/US2007/75215 | 08/03/2007 | 27527/41965A (52045-RU-PCT) |
| United States | 11/833,726 | 08/03/2007 | 27527/41965A (52045-US-PCT) |
| United States | 60/835,777 | 08/04/2006 | 27527/41965 (PP28230.001) |

ACKNOWLEDGMENT

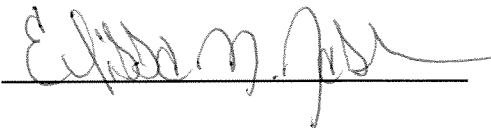
State of California
County of Alameda

On February 19, 2009 before me, Elissa M. Nash, Notary Public
(insert name and title of the officer)

personally appeared Lisa E. Alexander
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature  (Seal)

