## PATENT ASSIGNMENT

## Electronic Version v1.1 Stylesheet Version v1.1

UBMISSION TYPE: NEW ASSIGNMENT					
NATURE OF CONVEYANCE:		ASSIGNMENT			
CONVEYING PARTY DAT	Ā				
		Name	Execution Date		
Novartis Vaccines and Dia	agnostics Gmb⊦		03/15/2011		
RECEIVING PARTY DATA	4				
Name: No	vartis AG				
Street Address: Lic	htstrasse 35				
City: Ba	sel				
State/Country:	VITZERLAND				
Postal Code: 40	56				
Property Type		Num	ber		
Dreaments			har		
Application Number:	1292	8165		2	
Application Number: 61283		3548		20192465	
CORRESPONDENCE DA	TA			`	
Fax Number:	(510)655-354	2			
Correspondence will be sent via US Mail when the fax attempt is unsuccessful.					
Email:diana-1.castillo@novartis.comCorrespondent Name:Novartis Vaccines and Diagnostics, Inc.					
Address Line 1:     4560 Horton Street, MS X-100B					
Address Line 4: Emeryville, CALIFORNIA 94608-2916					
ATTORNEY DOCKET NUMBER:		PAT053948-US-NP			
NAME OF SUBMITTER:		Helen Lee			
Total Attachments: 3 source=53948-US-NP Ass source=53948-US-NP Ass source=53948-US-NP Ass	gn GmbH-AG#p	page2.tif			

### ASSIGNMENT OF PATENT APPLICATION

Whereas Novartis Vaccines and Diagnostics GmbH, a corporation of the country of the Germany, having a place of business at Emil-von-Behring Strasse 76, Marburg, Germany 35041, ("ASSIGNOR") and Novartis AG, a corporation of Switzerland having a place of business at Lichtstrasse 35, 4056 Basel, Switzerland, ("ASSIGNEE") have agreed that ASSIGNEE shall acquire from ASSIGNOR the following patents and/or patent applications ("PATENT PROPERTIES"):

Patent No.	Application No.	Filing Date	Issue Date
	12,928,165	December 3, 2010	)
61/283,548		December 3, 2009	

Therefore, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, ASSIGNOR, the owner of the entire right, title, and interest in the PATENT PROPERTIES, hereby sells, assigns, transfers and conveys to ASSIGNEE, its designees, successors, assigns and legal representatives, the entire right, title and interest in the PATENT PROPERTIES and all divisions, continuations, reissues and reexaminations thereof, the inventions therein, and all rights to claim priority from the PATENT PROPERTIES and all applications for patent that may be filed for the inventions in any foreign country and all patents that may be granted on the inventions in any foreign country, and all extensions, renewals, and reissues thereof; each and every of the foregoing rights, titles and interests herein assigned shall be held and enjoyed by ASSIGNEE, its successors, assigns and legal representatives, as fully and entirely as the same would have been held and enjoyed by ASSIGNOR had this Assignment not been made. IN TESTIMONY WHEREOF, Assignor has caused this Assignment to be duly executed in its name and behalf by affixing its hand and seal thereto by its designated officer, director, or agent, whose name and title appear below.

Executed at Emeryville, California this \_\_\_\_\_ day of March, 2011.

Novartis Vaccines and Diagnostics GmbH

Signature Name: Amy Hessler Title: Attorney-in-Fact

State of California ) County of Alameda ) before me, \_\_\_\_\_, Notary Public, personally On appeared Amy Hessler, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person 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 of Notary Public Place Notary Seal Above

### CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

#### CIVIL CODE § 1189

evidence to be the person(s) whose name(s) is/a subscribed to the within instrument and acknowledge to me that he/she/they executed the same bis/her/their authorized capacity(ies), and that is bis/her/their signature(s) on the instrument. NUMERAL COLLING NOWE AND ALL COLLING NOW AND ALL COLLING ALL COL	State of California County of <u>Alamedaa</u>		
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I certify under PENALTY OF PERJURY under the set of California that the foregoin paragraph is true and correct.     WITNESS my hand and official seal.     Signature:		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	
Aismeda County     My Comm. Extra Dec 9, 2014     I certify under PENALTY OF PERJURY under the     laws of the State of California that the foregoin     paragraph is true and correct.     WITNESS my hand and official seal.     Signature:			
paragraph is true and correct.  WITNESS my hand and official seal.  Signature:	Alsmeda County	I certify under PENALTY OF PERJURY under the	
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Signature:       Augustication         Place Notary Seal Above       OPTIONAL         Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.         Description of Attached Document         Title or Type of Document:         Document Date:         Signer(s) Other Than Named Above:         Capacity(ies) Claimed by Signer(s)         Signer's Name:         Corporate Officer — Title(s):         Individual         Partner — Limited General         Top of thumb here         Partner win Fact         Trustee         Guardian or Conservator		paragrap no suo ano porroda	
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and could prevent fraudulent removal and reattachment of this form to another document.         Description of Attached Document         Title or Type of Document:         Document Date:         Signer(s) Other Than Named Above:         Capacity(ies) Claimed by Signer(s)         Signer's Name:         Corporate Officer — Title(s):         Individual         Partner — Limited   General         Top of thumb here         Attorney in Fact         Trustee         Guardian or Conservator	Though the information holow is not required by	IONAL	
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Document Date:	•		
Signer(s) Other Than Named Above:         Capacity(les) Claimed by Signer(s)         Signer's Name:       Signer's Name:         Corporate Officer — Title(s):       Corporate Officer — Title(s):         Individual       Individual         Partner — Limited © General       Top of thumb here         Attorney in Fact       Trustee         Guardian or Conservator       Guardian or Conservator			
Capacity(ies) Claimed by Signer(s)         Signer's Name:	Document Date:	Number of Pages:	
Signer's Name:       Signer's Name:         Corporate Officer — Title(s):       Corporate Officer — Title(s):         Individual       Individual         Partner — Climited	· · · ·		
Corporate Officer — Title(s):       Corporate Officer — Title(s):         Individual       Individual         Partner — Limited General       Top of thumb here         Attorney in Fact       Attorney in Fact         Trustee       Guardian or Conservator	Capacity(ies) Claimed by Signer(s)		
<ul> <li>Individual</li> <li>Partner — Limited General</li> <li>Attorney in Fact</li> <li>Trustee</li> <li>Guardian or Conservator</li> <li>Individual</li> <li>Individual</li> <li>Partner — Limited General</li> <li>Top of thumb here</li> <li>Attorney in Fact</li> <li>Trustee</li> <li>Guardian or Conservator</li> </ul>	5		
<ul> <li>Partner — ☐ Limited ☐ General Top of thumb here</li> <li>Attorney in Fact</li> <li>Trustee</li> <li>Guardian or Conservator</li> <li>Partner — ☐ Limited ☐ General Top of thumb here</li> <li>Trustee</li> <li>Guardian or Conservator</li> </ul>			
□ Partner — □ Limited □ General       Top of thumb here       □ Partner — □ Limited □ General       Top of thumb here         □ Attorney in Fact       □ Attorney in Fact       □ Trustee         □ Guardian or Conservator       □ Guardian or Conservator			
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# **RECORDED: 03/17/2011**