

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3115167

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MARIAGRAZIA PIZZA	09/10/2012
LAURA SERINO	09/10/2012
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	NOVARTIS VACCINES AND DIAGNOSTICS SRL
<b>Street Address:</b>	VIA FIORENTINA 1
<b>City:</b>	SIENA
<b>State/Country:</b>	ITALY
<b>Postal Code:</b>	I-53100
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	14344892
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(415)268-7522
<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>	4152686846
<b>Email:</b>	fsoria@mofo.com
<b>Correspondent Name:</b>	OTIS B. LITTLEFIELD
<b>Address Line 1:</b>	MORRISON & FOERSTER LLP
<b>Address Line 2:</b>	425 MARKET STREET
<b>Address Line 4:</b>	SAN FRANCISCO, CALIFORNIA 94105
<b>ATTORNEY DOCKET NUMBER:</b>	529552004800
<b>NAME OF SUBMITTER:</b>	OTIS B. LITTLEFIELD
<b>SIGNATURE:</b>	/Otis Littlefield/
<b>DATE SIGNED:</b>	11/19/2014
<b>Total Attachments: 2</b>	
source=Assignment-inventors-to-SRL-52955-2004800#page1.tif	
source=Assignment-inventors-to-SRL-52955-2004800#page2.tif	

**ASSIGNMENT**

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

(1) PIZZA, Mariagrazia, (2) SERINO, Laura

do hereby sell, assign and transfer to Novartis Vaccines and Diagnostics S.R.L., with a place of business at Via Fiorentina 1, I-53100, Siena, Italy, (hereinafter referred to as the "ASSIGNEE") and its successors, assigns and legal representatives, all our right, title and interest for all countries of the world in and to (1) all of our inventions and discoveries described in the patent application(s) entitled

**ESCHERICHIA COLI VACCINE COMBINATION**

filed\* in the RO/ IB on September 14, 2012, and accorded International Patent Application Number PCT /IB2012/054825, (2) said patent application(s), (3) all national stages of said international patent application, (4) all other patent applications in all countries and regions claiming the priority of the Great Britain patent application filed on 14 September 2011 and accorded Application Number GB1115906.8, and claiming the priority of the Great Britain patent application filed on 25 July 2012 and accorded patent Application Number GB1213251.0 (5) all continuations and divisions of all of said patent applications (including further continuations and divisions such as, but not limited to, continuations of continuations and continuations of divisions), ((2)-(5) hereinafter referred to collectively as "patent applications"), (6) all patents that are granted on any of said patent applications, (7) all registrations and confirmations of, and importation certificates based on, one or more of said patents and (8) all reissues, renewals and extensions of said patents, reexamination certificates issued for said patents and supplementary protection certificates based on said patents (including the right to file patent applications on said inventions and discoveries in the names of ASSIGNEE, their designees or in any or all of our names, at their election and in accordance with applicable law in all countries and regions and all rights of priority in all countries and regions for all of said patent applications under the International Convention for the Protection of Industrial Property, and all other applicable similar international agreements), the same to be held and enjoyed by said ASSIGNEE, their successors, assigns and legal representatives, to the full ends of the terms for which all patents therefor 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 instrument the Application Number and the filing date of said patent application when notified thereof.

And we hereby covenant and agree that we will, at any time, upon the request and at the expense of ASSIGNEE, 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 and supplementary protection certificates in ASSIGNEE, their successors, assigns or other 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, that we will, at any time, upon the request and at the expense of ASSIGNEE, execute all additional patent applications, applications for registration and/or confirmation of one or more of said patents, applications for certificates of importation based on one or more of said patents, applications for reissues, renewals and extensions of one or more of said patents and supplemental protection certificates based upon one or more of said patents, and that we will 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, the successors, assigns or other legal representatives.

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

Executed this 10<sup>th</sup> day of Sept, 2012.  
Mariagrazia PIZZA L.S.  
Name: Mariagrazia PIZZA

Hei Hei  
Witnessed by  
Monty Pohl  
Witnessed by

Executed this 11<sup>th</sup> day of Sept, 2012.  
Laura SERINO L.S.  
Name: Laura SERINO

Hei Hei  
Witnessed by  
Monty Pohl  
Witnessed by

Executed this 20<sup>th</sup> day of Sept, 2012.  
NOVARTIS VACCINES AND DIAGNOSTICS srl  
ETIENNE EVANS L.S.  
Name: ETIENNE EVANS.

Hei Hei  
Witnessed by  
Monty Pohl  
Witnessed by