505472840 05/13/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5519643

| SUBMISSION TYPE: | NEW ASSIGNMENT | |
|-----------------------|---------------------------|--|
| NATURE OF CONVEYANCE: | MERGER AND CHANGE OF NAME | |
| EFFECTIVE DATE: | 12/20/2013 | |

CONVEYING PARTY DATA

| Name | Execution Date |
|---------------------------------|----------------|
| TAKEDA VACCINES (MONTANA), INC. | 12/12/2013 |
| INVIRAGEN, INC. | 12/20/2013 |

NEWLY MERGED ENTITY DATA

| Name | Execution Date |
|-----------------------|----------------|
| TAKEDA VACCINES, INC. | 12/20/2013 |

MERGED ENTITY'S NEW NAME (RECEIVING PARTY)

| Name: | TAKEDA VACCINES, INC. | |
|-----------------|-----------------------|--|
| Street Address: | 75 SIDNEY STREET | |
| City: | CAMBRIDGE | |
| State/Country: | MASSACHUSETTS | |
| Postal Code: | 02139 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16213297 |

CORRESPONDENCE DATA

Fax Number: (202)842-7899

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: 2028427800

Email: zlPPatentDocketingMailboxUS@cooley.com
Correspondent Name: COOLEY LLP / PATENT DEPARTMENT

Address Line 1: 1299 PENNSYLVANIA AVENUE, NW, SUITE 700

Address Line 4: WASHINGTON, D.C. 20004

| ATTORNEY DOCKET NUMBER: | LIGO-016/04US 306927-2416 | |
|-------------------------|---------------------------|--|
| NAME OF SUBMITTER: | SHIRLEY H. TAN | |
| SIGNATURE: | /Shirley Tan/ | |
| DATE SIGNED: | 05/13/2019 | |

PATENT REEL: 049158 FRAME: 0823

505472840

Total Attachments: 6

source=LIGO-016-04US Assignment - parent - executed - merger - Takeda Vaccines Inc#page1.tif source=LIGO-016-04US Assignment - parent - executed - merger - Takeda Vaccines Inc#page2.tif source=LIGO-016-04US Assignment - parent - executed - merger - Takeda Vaccines Inc#page3.tif source=LIGO-016-04US Assignment - parent - executed - merger - Takeda Vaccines Inc#page4.tif source=LIGO-016-04US Assignment - parent - executed - merger - Takeda Vaccines Inc#page5.tif source=LIGO-016-04US Assignment - parent - executed - merger - Takeda Vaccines Inc#page6.tif

Delaware

PAGE 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF

DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT

COPY OF THE CERTIFICATE OF MERGER, WHICH MERGES:

"INVIRAGEN, INC.", A DELAWARE CORPORATION,

WITH AND INTO "TAKEDA VACCINES (MONTANA), INC." UNDER THE NAME OF "TAKEDA VACCINES, INC.", A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, AS RECEIVED AND FILED IN THIS OFFICE THE NINETEENTH DAY OF DECEMBER, A.D. 2013, AT 3:28 O'CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF MERGER IS THE THIRTY-FIRST DAY OF DECEMBER, A.D. 2013, AT 12:01 O'CLOCK A.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.

4500744 8100M

131453003

AUTHENT CATION: 1001434

DATE: 12-20-13

PATENT REEL: 049158 FRAME: 0825

You may verify this certificate online at corp.delaware.gov/authver.shtml

State of Delaware Secretary of State Division of Corporations Delivered 04:10 PM 12/19/2013 FILED 03:28 PM 12/19/2013 SRV 131453003 - 4500744 FILE

CERTIFICATE OF MERGER

Merging

INVIRAGEN, INC.

(a Delaware Corporation)

with and into

TAKEDA VACCINES (MONTANA), INC.

(a Delaware Corporation)

Pursuant to Section 251(c) of the General Corporation Law of the State of Delaware (the "DGCL"), Takeda Vaccines (Montana), Inc., a Delaware corporation (the "Corporation"), hereby certifies the following information relating to the merger (the "Merger") of Inviragen, Inc. a Delaware corporation, with and into the Corporation:

FIRST: The names and state of incorporation of each of the corporations constituent to the Merger are as follows:

Name Jurisdiction
Inviragen, Inc. Delaware
Takeda Vaccines (Montana), Inc. Delaware

SECOND: An agreement and plan of merger was entered into by the constituent corporations and has been approved, adopted, certified, executed, and acknowledged by each of the constituent corporations in accordance with Section 251(c) of the DGCL.

THIRD: The surviving corporation of the Merger is Takeda Vaccines (Montana), Inc., and the surviving corporation shall change its name to Takeda Vaccines, Inc.

FOURTH: Upon the effectiveness of the Merger, the Certificate of Incorporation of the Corporation, shall be amended and restated in its entirety as set forth on Exhibit A hereto and as so amended and restated, shall continue as the Amended and Restated Certificate of Incorporation of the surviving corporation until further amended in accordance with the provisions of the DGCL.

FIFTH: The executed agreement and plan of merger is on file at the principal place of business of the surviving corporation, at 2155 Analysis Drive, Bozeman, Montana 59718, and will be furnished by the surviving corporation, on request and without cost, to any stockholder of either constituent corporation.

SIXTH: The Merger shall become effective at 12:01 a.m. Eastern Time on December 31, 2013.

IN WITNESS WHEREOF, the undersigned has caused this Certificate of Merger to be executed by its duly authorized officer on this 12 day of December, 2013.

TAKEDA VACCINES (MONTANA), INC.

By: Paigou V

Name: Rajeev Venkayya

Title: President

EXHIBIT A

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION

[Attached]

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION OF TAKEDA VACCINES, INC.

ARTICLE I

The name of the corporation (which is hereinafter referred to as the "Corporation") is Takeda Vaccines, Inc.

ARTICLE II

The address of the Corporation's registered office in the State of Delaware is The Corporation Trust Center, 1209 Orange Street, Wilmington, New Castle County, Delaware 19801. The name of the Corporation's registered agent at such address is The Corporation Trust Company.

ARTICLE III

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the Delaware General Corporation Law.

ARTICLE IV

The total number of shares of all classes of capital stock which the Corporation shall have the authority to issue is 100 shares of common stock with a par value of \$0.01 per share.

ARTICLE V

In furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, alter or repeal the By-laws of the Corporation, subject to any specific limitations on such power contained in any By-laws adopted by the stockholders. Elections of directors need not be by written ballot unless the By-laws of the Corporation so provide.

ARTICLE VI

A director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to the Corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the Delaware General Corporation Law, or (iv) for any transaction from which the director derived an improper personal benefit. If the Delaware General Corporation Law is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the Delaware General Corporation Law, as so amended. Any repeal or modification of this Article Sixth by the stockholders of the

RECORDED: 05/13/2019

Corporation shall not adversely affect any right or protection of a director of the Corporation existing at the time of such repeal or modification.

ARTICLE VII

Each person who is or was a director or officer of the Corporation, and each person who serves or served at the request of the Corporation as a director or officer of another enterprise, shall be indemnified by the Corporation in accordance with, and to the fullest extent authorized by, the Delaware General Corporation Law as it may be in effect from time to time.

ARTICLE VIII

The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Amended and Restated Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon the stockholders herein are granted subject to this reservation.