502130531 11/15/2012

PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|--------------------------|
| NATURE OF CONVEYANCE: | NUNC PRO TUNC ASSIGNMENT |
| EFFECTIVE DATE: | 03/17/2010 |

CONVEYING PARTY DATA

| Name | Execution Date |
|--|----------------|
| HER MAJESTY THE QUEEN IN RIGHT OF CANADA | 10/12/2012 |

RECEIVING PARTY DATA

| Name: | UNIVERSITE DE SHERBROOKE | |
|-----------------|--------------------------|--|
| Street Address: | 2500 BOUL. UNIVERSITE | |
| City: | SHERBROOKE, QUEBEC | |
| State/Country: | CANADA | |
| Postal Code: | J1K 2R1 | |

| Name: | UNIVERSITE DE MONTREAL | |
|-----------------|------------------------|--|
| Street Address: | 2900 EDOUARD-MONTPETIT | |
| City: | MONTREAL, QUEBEC | |
| State/Country: | CANADA | |
| Postal Code: | H3C 3J7 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 13583054 |

CORRESPONDENCE DATA

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PATENT

\$40.00

502130531 REEL: 029305 FRAME: 0459

| ATTORNEY DOCKET NUMBER: | 765/14692.28 |
|--|--------------|
| NAME OF SUBMITTER: | Anna Fovero |
| Total Attachments: 4 source=765-USPTO-Assignment2#page1.tif source=765-USPTO-Assignment2#page2.tif source=765-USPTO-Assignment2#page3.tif source=765-USPTO-Assignment2#page4.tif | |

PATENT REEL: 029305 FRAME: 0460

CONFIRMATION OF PAST ASSIGNMENT AND ASSIGNMENT OF INVENTION

UNIVERSAL

| WHEREAS, the invention entitled BACTERIAL VACCINE COMPONENTS AND |
|--|
| USES THEREOF described in PCT Patent Application No. PCT/CA2011/050145 filed on |
| March 17, 2011 which claims priority on 61/314,670 filed on March 17, or a part of said |
| invention, was assigned on October 12, 2010 (hereinafter referred to as the "past |
| assignment") by Her Majesty the Queen in Right of Canada as represented by the Minister |
| of Agriculture and Agri-Food, whose full address is 2000, rue Collège, Sherbrooke, Québec, |
| Canada J1M 1Z3 (hereinafter referred to as the Assignor) to 1) UNIVERSITÉ DE |
| SHERBROOKE and 2) UNIVERSITÉ DE MONTRÉAL, whose full post office addresses are |
| 1) 2500, boul. Université, Sherbrooke, Québec, Canada J1K 2R1; and 2) 2900 Édouard- |
| Montpetit, Montréal, Québec, Canada H3C 3J7 (hereinafter referred to as the Assignees). |
| I/We hereby authorize and request my/our patent agent to insert missing information above |
| and information regarding any additional application covering the same invention when |
| known here in parentheses (Country Canada, Application No, filed |
| ; Country United States, Application 13/583,054, filed September 6, 2012; |
| Country Europe, Application No, filed; Country *, |
| Application No, filed; Country *, Application No. |
| , filed;); and |
| WHEREAS the Assigner and the Assigneds are decirous of confirming this meet |

WHEREAS the Assignor and the Assignees are desirous of confirming this past assignment;

WHEREAS the Assignor is desirous of assigning and the Assignees are desirous of obtaining any part of said invention not previously assigned.

NOW, THEREFORE, in consideration of One Dollar (\$1.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Assignor

has, and by these present do hereby sell, assign and transfer unto said Assignees, its successors and assigns, the Assignor's entire right, title and interest in and to said part of said invention not previously assigned as described in the aforesaid application, in any form or embodiment thereof, and in and to the aforesaid application; and in and to any applications based thereon filed in any foreign country, including the right to file said foreign applications under the provisions of the Patent Cooperation Treaty and under the Paris Convention; also the Assignor's entire right, title and interest in and to any and all patents, reissues or extensions thereof to be obtained in this or any foreign country upon said invention or inventions and any divisional, continuation, continuation-in-part, substitute application(s) or supplementary disclosure(s) which may be filed upon said invention or inventions, in any country; and the Assignor hereby authorizes and requests the issuing authority to issue any and all patents on said application or applications to said Assignees.

The Assignors further agrees, without any payment by said Assignees other than expenses incurred by the undersigned, to communicate to said Assignees, its representatives or agents, any facts useful as evidence for interference purposes or for other proceedings relating to intellectual property encompassing the invention, whenever requested; testify in any interference, litigation or other proceedings, whenever requested; and execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective, and likewise make these provisions binding upon the Assignor's heirs, legal representatives, administrators and assigns.

Les soussignés désirent que la présente cession soit rédigée en anglais. The undersigned request that the present assignment be drafted in English.

2/4

IN WITNESS WHEREOF, the Assignors and Assignees have hereunto set their hands and seal.

WITNESS(ES)

DATE

ASSIGNOR(S)

Signature of Witness

MM/DD/YYYY

Signature of authorized representative of Her Majesty the Queen in Right of Canada as represented by the Minister of Agriculture and Agri-Food

Anita Ploj

Name of authorized representative of Her Majesty the Queen in Right of Canada as represented by the Minister of Agriculture and Agri-Food

Director, Office of Intellectual Property and Commercialization

Title of authorized representative of Her Majesty the Queen in Right of Canada as represented by the Minister of Agriculture and Agri-Food

WITNESS(ES)

DATE

ASSIGNEE(S)

Signature of Witness

Signature of authorized representative of UNIVERSITÉ DE SHERBROOKE

Jacques Beauvais

Name of authorized representative of UNIVERSITÉ DE SHERBROOKE

Vice-recteur à la recherche

Title of authorized representative of UNIVERSITÉ DE SHERBROOKE

WITNESS(ES)

DATE

ASSIGNEE(S)

Name of Witness

Signature of authorized representative OF UNIVERSITE DE MONTRÉAL

Dominique Bérubé

Name of authorized representative of UNIVERSITÉ DE MONTRÉAL

Directrice

générale du Bureau

Recherche-Développement-

Valorisation

Title of authorized representative of UNIVERSITÉ DE MONTRÉAL

The Assignment is executed nunc pro tunc as of March 17, 2010