PATENT ASSIGNMENT COVER SHEET

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NATURE OF CONVEYANCE:	ASSIGNMENT

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DEBORAH ALEXA SIRKO-OSADSA	05/03/2011
LYNNE ROSENBLUM	05/03/2011
NARASIMHAN NAGAN	05/03/2011
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RUTH HEIM	05/12/2011

RECEIVING PARTY DATA

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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15490928

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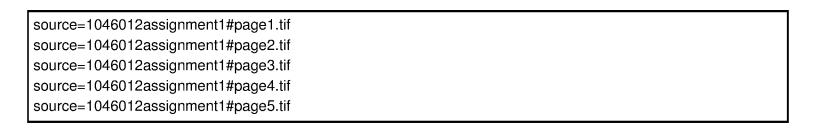
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DATE SIGNED:	08/21/2018

Total Attachments: 5

PATENT REEL: 046650 FRAME: 0741

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PATENT REEL: 046650 FRAME: 0742

ASSIGNMENT OF PATENT APPLICATION

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

Elizabeth Rohlfs of 111 Winter Street, Hopkinton, MA 01748

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(collectively, "the Inventors" or "the Assignors") do hereby sell, assign, and transfer to Esoterix Genetic Laboratories, LLC, a corporation of the State of North Carolina, having its principal place of business at 358 South Main Street, Burlington, NC 27215 ("the Assignee"), and the Assignee's successors and assigns, all right, title, and interest for all countries in and to the United States patent application entitled

MUTATIONS ASSOCIATED WITH CYSTIC FIBROSIS, filed March 22, 2011, and identified as United States Patent Application No. 13/053,626, ("the Application"),

and in and to any and all inventions disclosed in the Application ("the Inventions") and all nonprovisional applications for United States Patent, including divisional, continuing, substitute, renewal, and reissue thereof, and all other applications for United States Letters Patent or other related property rights in any and all foreign countries which have been or shall be filed on one or more of the Inventions, and in and to all original and reissued patents or related foreign documents that have been or shall be issued on one or more of the Inventions.

We, the Assignors, in accordance with this assignment, authorize and request the Commissioner for Patents of the United States to issue to the Assignee or the Assignee's successors and assigns, in accordance with this assignment, any and all United States Letters Patents that claim or disclose one or more of the Inventions.

We, the Assignors, further agree, for good and valuable consideration, the receipt of which is hereby acknowledged, that the Assignee or the Assignee's successors and assigns may apply for and receive foreign Letters Patents or similar such rights and, in doing so, may make a claim of priority to the Application under the provisions of any bilateral or multilateral treaty or international agreement, including but not limited to, the International Convention of 1883 and later modifications thereof ("the Paris Convention"), the Patent Cooperation Treaty, the European Patent Convention, the Eurasian Patent Convention, the agreement(s) of the African Regional Intellectual Property Organization, the agreement(s)

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of the Organisation Africaine de la Propriete Intellectuelle, and the agreement(s) of the Cooperation Council for the Arab States of the Gulf; and that, when requested, without charge to the Assignee or the Assignee's successors and assigns, to carry out in good faith the intent and purpose of this assignment, the Inventors, or their executors or administrators, will, for the United States and any and all foreign countries: (i) execute any and all documents related to any application for patent in the United States or a foreign country, where such application discloses one or more of the Inventions; (ii) execute any and all oaths, declarations, assignments, confirmatory assignments, powers of attorney and other papers concerning one or more of the Inventions and any and all patent applications thereon, whether in the United States or a foreign country; and (iii) perform other such acts, at the request of the Assignee or the Assignee's successors and assigns, to obtain or maintain any and all patents or related property rights in the United States or any foreign country on one or more of the Inventions or any improvements thereto and to vest title thereto in the Assignee or the Assignee's successors and assigns.

In testimony whereof, we, the Assignors, have each signed our names below on the dates indicated. By such signature, we, the Assignors, each acknowledge that we are of sound mind and health, that we have read and understood all terms recited above, and that we are signing this of our own free will for the purposes stated herein.

SIGNATURES ARE ON THE FOLLOWING PAGES

(Remainder of page intentionally left blank)

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Elizabeth Rohlfs
05/12/2011

Date

SIGNATURE WITNESSED BY

Name of Witness (Printed)

Signature of Witness

Date Witnessed

Deborah Alexa Sirko-Osadsa

Date

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Signature of Witness

Date Witnessed

Assignment of Patent Application United States Patent Application No. 13/053,626 Page 3 of 5

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5.3.2011

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Narasimhan Nagan

05-03-2011

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Date Witnessed

Assignment of Patent Application United States Patent Application No. 13/053,626 Page 4 of 5

US2008 2547819.1

Zhaoqing Zhou
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