

JOINT ASSIGNMENT

WHEREAS, each of the below-named inventors whose name and residence is set forth in the following Table 1:

Inventor Name	City, State
1. Norman Barton	Lexington, MA
2. Alexandra Mangili	Lexington, MA

Table 1

hereby declares and agrees, on behalf of himself/herself and all of his/her successors and assigns that each is aware of the patent application(s) entitled:

METHODS AND COMPOSITIONS FOR TREATING CHRONIC LUNG DISEASES

☐ prepared for filing in the United States Patent and Trademark Office; or

☒ identified by United States Application Serial No. 62/557,113
filed in the United States Patent and Trademark Office on; September 11, 2017 ;

☐ identified by International Patent Application No. _____
filed on _____ ; and

☐ and is also aware of the following priority applications:

Serial No.	Filed

WHEREAS Shire Human Genetic Therapies, Inc. (hereinafter "ASSIGNEE"), having a usual place of business at 300 Shire Way, Lexington, Massachusetts 02421, desires to acquire or confirm an interest therein;

NOW, THEREFORE, to all whom it may concern be it known that, in consideration of agreements previously and duly entered into between the parties, and/or for other good and valuable consideration, the receipt of which is hereby acknowledged, each of us has sold, assigned, and transferred and/or do hereby sell, assign, and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, my entire right, title, and interest in and throughout the United States of America, its territories and all foreign countries, in and to any and all inventions described in the patent application, and/or any priority applications noted above, including any right of priority thereto; and hereby confirm that my sale, assignment and transfer is and was effective at least as of

the filing date of the patent application and/or priority application. Our sale, assignment and transfer applies to the above-referenced patent application, and to any application that is based in whole or in part on the patent application, including any divisional, continuing, substitute, renewal, reissue, reexamination and other applications, for example that claim priority to the patent application. Also, this sale, assignment and transfer pertains to any and all other rights arising under or pursuant to any and all international agreements, treaties, or laws relating to the protection of industrial property, including all rights of priority under the International Convention for the Protection of Industrial Property, and in and to any such patent(s) as may issue thereon including any and all original and reissued patents which have been or shall be issued in the United States and foreign countries; said inventions, applications, and patent(s) to be held and enjoyed by ASSIGNEE for its own use and for its successors, assigns and legal representatives, to the full end of the term for which said patent(s) may be granted as fully and entirely as the same would have been held by each of us had this sale, assignment and transfer not been made;

AND, each of us hereby acknowledges that this Assignment, being of our entire right, title, and interest in and to the inventions, carries with it the right in ASSIGNEE, by attorneys and agents of ASSIGNEE selection, to apply for and receive any and all patent(s) for said inventions in its own name;

AND, each of us hereby further agrees for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the patent(s) to ASSIGNEE, its successors, assignees, and legal representatives, but at its expense and charges, including the execution of application for patents in foreign countries, the execution of substitution, reissue, divisional or continuation applications, and the giving of testimony, preliminary statements, or other statements in any interference or other proceeding in which the inventions or any applications or patents directed to the inventions may be involved by communicating to the ASSIGNEE all facts we know relating to the inventions and their history, and generally by doing everything possible which ASSIGNEE shall consider desirable for aiding in securing and maintaining proper patent protection for the inventions and for vesting title in the inventions and all applications for patent and all patents on the inventions in ASSIGNEE;

AND, each of us further hereby authorizes ASSIGNEE or its attorneys or agents to insert the correct serial number(s) and/or filing date(s) into this assignment document, if appropriate;

AND, each of us hereby appoints ASSIGNEE as my common agent for purposes of prosecuting international patent applications and any national patent applications for which such common agency is recognized;

AND, each of us hereby requests the Commissioner for Patents of the United States Patent and Trademark Office to issue any and all patent(s) as shall be granted upon said application or applications based thereon to ASSIGNEE, its successors, assigns, and legal representatives;

AND, each of us covenants with said ASSIGNEE that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by us, and that full right to convey the same as herein expressed is possessed by us.

Acknowledged and agreed to by:
Shire Human Genetic Therapies, Inc.

By: Mgo 2
Name: Margo Furman
Title: Vice President Legal IP
Date: 18 July 2018

STATE OF Massachusetts SS.
COUNTY OF Middlesex

Before me this 18th day of July, 2018, personally appeared Margo Furman, and proved to me through satisfactory evidence of identity which was license to be the person whose name is signed on the preceding or attached document, and acknowledged that he/she executed the same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC

Amanda Curchiara
Name: Amanda Curchiara
My Commission Expires: 15 June 2023



SIGNED this 16TH day of July, 2018

Norman Barton
Norman Barton

STATE OF _____
SS.

COUNTY OF _____

Before me this _____ day of _____, 20____, personally appeared
_____Norman Barton_____, and proved to me through satisfactory
evidence of identity which was _____ to be the person whose name is
signed on the preceding or attached document, and acknowledged that he/she executed the
same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC

Name: _____
My Commission Expires: _____

WITNESSES

Witness Signature: Theresa Gallagher
Witness Name: THERESA GALLAGHER
Witness Date: 7/16/18

Witness Signature: Ming Yu
Witness Name: Ming Yu
Witness Date: 16 Jul 2018

SIGNED this 17 day of July, 2018

Alexandra Mangili

STATE OF _____
COUNTY OF _____ SS.

Before me this _____ day of _____, 20____, personally appeared
_____ Alexandra Mangili _____, and proved to me through satisfactory
evidence of identity which was _____ to be the person whose name is
signed on the preceding or attached document, and acknowledged that he/she executed the
same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC

Name: _____
My Commission Expires: _____

WITNESSES

Witness Signature: [Signature]
Witness Name: ARAGOS BUDINSCHI
Witness Date: 17 July 2018

Witness Signature: [Signature]
Witness Name: ROSEANNE GERNARY
Witness Date: 17 JULY 2018