

PATENT ASSIGNMENT

Electronic Version v1.1
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Hongsheng Xie</td> <td>04/10/2013</td> </tr> <tr> <td>Brian Felice</td> <td>04/10/2013</td> </tr> <tr> <td>Thomas McCauley</td> <td>04/12/2013</td> </tr> </tbody> </table>		Name	Execution Date	Hongsheng Xie	04/10/2013	Brian Felice	04/10/2013	Thomas McCauley	04/12/2013		
Name	Execution Date										
Hongsheng Xie	04/10/2013										
Brian Felice	04/10/2013										
Thomas McCauley	04/12/2013										
RECEIVING PARTY DATA											
<table border="1"> <tr> <td>Name:</td> <td>Shire Human Genetic Therapies, Inc.</td> </tr> <tr> <td>Street Address:</td> <td>300 Shire Way</td> </tr> <tr> <td>City:</td> <td>Lexington</td> </tr> <tr> <td>State/Country:</td> <td>MASSACHUSETTS</td> </tr> <tr> <td>Postal Code:</td> <td>02421</td> </tr> </table>		Name:	Shire Human Genetic Therapies, Inc.	Street Address:	300 Shire Way	City:	Lexington	State/Country:	MASSACHUSETTS	Postal Code:	02421
Name:	Shire Human Genetic Therapies, Inc.										
Street Address:	300 Shire Way										
City:	Lexington										
State/Country:	MASSACHUSETTS										
Postal Code:	02421										
PROPERTY NUMBERS Total: 1											
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>PCT Number:</td> <td>US2013031662</td> </tr> </tbody> </table>		Property Type	Number	PCT Number:	US2013031662						
Property Type	Number										
PCT Number:	US2013031662										
CORRESPONDENCE DATA											
Fax Number: 6175025002 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> Phone: 617-248-5000 Email: patentdocket@choate.com Correspondent Name: Choate Hall & Stewart LLP Address Line 1: Two International Place Address Line 4: Boston, MASSACHUSETTS 02110											
ATTORNEY DOCKET NUMBER:	2006685-0291										
NAME OF SUBMITTER:	Justin P. Huddleson										
Signature:	/Justin P. Huddleson/										
Date:	04/22/2013										

OP \$40.00 US2013031662

Total Attachments: 6

source=Executed_Assignment_and_Declaration#page1.tif

source=Executed_Assignment_and_Declaration#page2.tif

source=Executed_Assignment_and_Declaration#page3.tif

source=Executed_Assignment_and_Declaration#page4.tif

source=Executed_Assignment_and_Declaration#page5.tif

source=Executed_Assignment_and_Declaration#page6.tif

COMBINED JOINT ASSIGNMENT & DECLARATION**A. 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. Hongsheng Xie	Acton, MA
2. Brian Felice	Wellesley, MA
3. Thomas McCauley	Cambridge, 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:

SUBCUTANEOUS ADMINISTRATION OF IDURONATE- 2-SULFATASE; and

☒ identified by United States Application Serial No. **PCT/US13/31662** filed in the United States Patent and Trademark Office on **March 14, 2013**; and

☒ is also aware of the following priority applications:

Serial No.: USSN 61/618,638; Filed: March 30, 2012

WHEREAS **Shire Human Genetic Therapies, Inc.** (hereinafter "ASSIGNEE"), having a usual place of business at **300 Shire Way, Lexington, MA 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, I have 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; 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. My 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 to 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 me had this sale, assignment and transfer not been made;

AND, I hereby acknowledge that this Assignment, being of my 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, I hereby further agree for myself and my 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 I 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, I further hereby authorize 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, I hereby appoint 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, I hereby request the Director of Patents and Trademarks of the United States 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, I covenant 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 me, and that full right to convey the same as herein expressed is possessed by me.

B. DECLARATION (37 CFR 1.63)

As a below named inventor, I hereby declare that:

This declaration is directed to the patent application entitled:

SUBCUTANEOUS ADMINISTRATION OF IDURONATE- 2-SULFATASE; and

☒ identified by United States Application Serial No. **PCT/US13/31662** filed in the United States Patent and Trademark Office on **March 14, 2013**.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

I have reviewed and understand the contents of the application, including the claims and am aware of the duty to disclose to the United States Patent and Trademark Office all information known to be material to patentability as defined in 37 CFR 1.56.

SIGNED this 10th day of April, 2013

Hongsheng Xie

Name: Hongsheng Xie

STATE OF MA (Massachusetts)

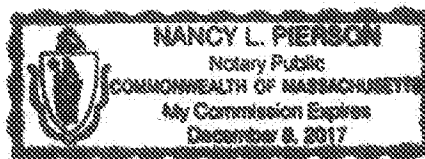
COUNTY OF Middlesex SS.

Before me this 10th day of April, 2013, personally appeared **Hongsheng Xie**, and proved to me through satisfactory evidence of identity which was MA Driver's 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

Nancy L. Pierson
Name: Nancy L. Pierson

My Commission Expires: December 8, 2017



SIGNED this 10th day of April, 2013.

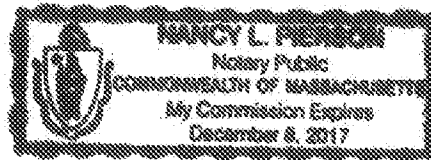
Brian Felice
Name: **Brian Felice**

STATE OF Massachusetts SS.
COUNTY OF Middlesex

Before me this 10th day of April, 2013, personally appeared **Brian Felice**, and proved to me through satisfactory evidence of identity which was MA Driver's 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

Nancy L. Pierson
Name: Nancy L. Pierson
My Commission Expires: December 8, 2017



SIGNED this 12th day of April, 20 13.

Thomas McCauley

Name: Thomas McCauley

STATE OF Massachusetts SS.

COUNTY OF Middlesex

Before me this 12th day of April, 20 13, personally appeared **Thomas McCauley**, and proved to me through satisfactory evidence of identity which was MA Driver's 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

Nancy L. Pierson

Name: Nancy L. Pierson

My Commission Expires: December 8, 2017

