504708452 12/29/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4755174

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
AMIR SHOJAEI	08/30/2006
STEPHANIE READ	09/14/2006
RICHARD A. COUCH	09/27/2006
PAUL HODGKINS	08/31/2006

RECEIVING PARTY DATA

Name:	SHIRE LLC
Street Address:	9200 BROOKFIELD COURT
City:	FLORENCE
State/Country:	KENTUCKY
Postal Code:	41042

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	15856282
Patent Number:	9173857

CORRESPONDENCE DATA

Fax Number:

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.

Email: IPservicesNYC@troutmansanders.com

Correspondent Name: TROUTMAN SANDERS LLP

Address Line 1: 875 THIRD AVENUE

Address Line 4: NEW YORK, NEW YORK 10022

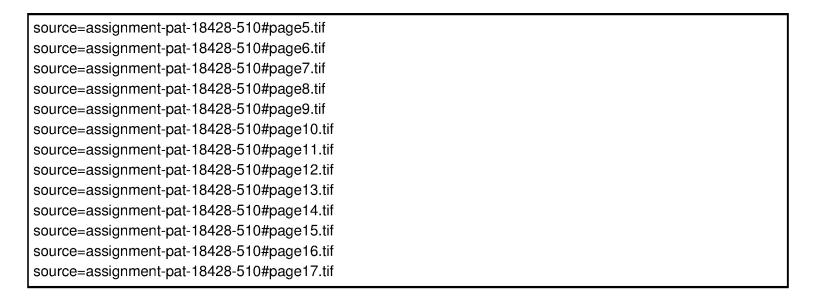
ATTORNEY DOCKET NUMBER:	250504.000167
NAME OF SUBMITTER:	RALUCA ONER
SIGNATURE:	/Raluca Oner/
DATE SIGNED:	12/29/2017

Total Attachments: 15

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> **PATENT** REEL: 044506 FRAME: 0374

504708452



PATENT REEL: 044506 FRAME: 0375

ASSIGNMENT

I, Amir Shojaei, a citizen of Canada, residing at 241 Rivercrest Drive; Phoenixville, Pennsylvania 19460, United States of America;

and each of us, if more than one person is identified above (hereinafter "ASSIGNOR") in consideration of the sum of Ten Dollars (\$10.00), or the equivalent thereof, and other good and valuable consideration, the sufficiency of which and receipt of which are hereby acknowledged, paid to ASSIGNOR by

SHIRE LLC

a corporation organized under the laws of the State of Kentucky, United States of America, located at 9200 Brookfield Court, Florence, Kentucky 41042 (hereinafter "ASSIGNEE"), do hereby sell and assign to said ASSIGNEE, its successors and assigns, the below indicated right, title, and interest, **throughout the world** in and to my Invention entitled:

CONTROLLED DOSE DRUG DELIVERY SYSTEM

invented by me and described in Patent Application No. 11/383,066, filed on May 12, 2006, in the United States of America; and all patents, divisions, reissues, continuations and any extensions thereof and rights of priority therein, said interest being my entire ownership interest in the same, to be held and enjoyed by said ASSIGNEE, its successors, assigns, or other legal representatives, to the full end of the term thereof, as fully and entirely as the same would have been held and enjoyed by me if this assignment and sale had not be made;

And for the consideration aforesaid, I hereby covenant and agree to and with said ASSIGNEE, its successors and assigns, that whenever ASSIGNEE, its counsel or representative, or the counsel or representative of its successors or assigns, shall advise that an amendment to, or a division of, or any other proceeding or action in connection with an application concerning said Invention, including interference proceedings, is lawful and desirable, or that a reissue or continuation or extension of such application or patent issuing therefrom is lawful and desirable, I will sign all papers and drawings, take all rightful oaths and affidavits, and do all acts necessary or required to be done for the procurement of all lawful rights associated with the Invention, or for the reissue or continuation or extension of the same, will do all acts necessary or required to secure in said ASSIGNEE, its successors or assigns, the

PATEINIT REEL: 0445208 FRANKE: 08762

title to and full benefit of all rights hereby assigned, without charge to said ASSIGNEE or its successors or assigns, but at its or their expense; and I hereby appoint every present or future officer of said ASSIGNEE as my agent to sign all such papers and to do all such necessary acts on my behalf, to the fullest extent permitted by law;

And I hereby authorize and request the Commission of Patents and Trademarks and any other granting authority to issue any Letters Patent resulting from said Invention and application(s) concerning same to said ASSIGNEE.

This assignment shall have an effective date corresponding to the last date of execution.

Aug 30'2006

Amir Shojaei

Witness:

30 August 06

Gerri Laurenzi Name:

ACCEPTANCE BY ASSIGNEE

In connection with an assignment in any jurisdiction in which an acceptance by ASSIGNEE is required, I hereby accept this assignment on behalf of SHIRE LLC. I declare under penalty of perjury under the laws of the United States of America, and under penalty of the laws of any other jurisdiction before which this document may be presented, that (check all that apply):

I am an officer of the above-identified ASSIGNEE,

I have signed this document on behalf of ASSIGNEE with the full authority of its board of directors,

and that all the foregoing is true and correct.

Dated: Ctopor 19, a

By:

Name: Jim Harrington

Title:

SVR Chief IP Counsel

ASSIGNMENT

I, Stephanie Read, a citizen of the United States of America, residing at 237 Gay Street, PA 19128, United States of America;

and each of us, if more than one person is identified above (hereinafter "ASSIGNOR") in consideration of the sum of Ten Dollars (\$10.00), or the equivalent thereof, and other good and valuable consideration, the sufficiency of which and receipt of which are hereby acknowledged, paid to ASSIGNOR by

SHIRE LLC

a corporation organized under the laws of the State of Kentucky, United States of America, located at 9200 Brookfield Court, Florence, Kentucky 41042 (hereinafter "ASSIGNEE"), do hereby sell and assign to said ASSIGNEE, its successors and assigns, the below indicated right, title, and interest, **throughout the world** in and to my Invention entitled:

CONTROLLED DOSE DRUG DELIVERY SYSTEM

invented by me and described in Patent Application No. 11/383,066, filed on May 12, 2006, in the United States of America; and all patents, divisions, reissues, continuations and any extensions thereof and rights of priority therein, said interest being my entire ownership interest in the same, to be held and enjoyed by said ASSIGNEE, its successors, assigns, or other legal representatives, to the full end of the term thereof, as fully and entirely as the same would have been held and enjoyed by me if this assignment and sale had not be made;

And for the consideration aforesaid, I hereby covenant and agree to and with said ASSIGNEE, its successors and assigns, that whenever ASSIGNEE, its counsel or representative, or the counsel or representative of its successors or assigns, shall advise that an amendment to, or a division of, or any other proceeding or action in connection with an application concerning said Invention, including interference proceedings, is lawful and desirable, or that a reissue or continuation or extension of such application or patent issuing therefrom is lawful and desirable, I will sign all papers and drawings, take all rightful oaths and affidavits, and do all acts necessary or required to be done for the procurement of all lawful rights associated with the Invention, or for the reissue or continuation or extension of the same, will do all acts necessary or required to secure in said ASSIGNEE, its successors or assigns, the

PATEINT REEL: 044508 FRANCE: 0376

title to and full benefit of all rights hereby assigned, without charge to said ASSIGNEE or its successors or assigns, but at its or their expense; and I hereby appoint every present or future officer of said ASSIGNEE as my agent to sign all such papers and to do all such necessary acts on my behalf, to the fullest extent permitted by law;

And I hereby authorize and request the Commission of Patents and Trademarks and any other granting authority to issue any Letters Patent resulting from said Invention and application(s) concerning same to said ASSIGNEE.

This assignment shall have an effective date corresponding to the last date of execution.

Date: Date:	Stephanie Read	~~
Witness:		
Date:	Name:	

ACCEPTANCE BY ASSIGNEE

In connection with an assignment in any jurisdiction in which an acceptance by ASSIGNEE is required, I hereby accept this assignment on behalf of SHIRE LLC. I declare under penalty of perjury under the laws of the United States of America, and under penalty of the laws of any other jurisdiction before which this document may be presented, that (check all that apply):

	I am an officer of the above-identified ASSIGNEE,
	I have signed this document on behalf of ASSIGNEE with the full authority of its board of directors,
	and that all the foregoing is true and correct.
Dated: (October 19,200/0By:
	Name: Jim Harrington Title: SVP Chilet IP Counsel

ASSIGNMENT

I, Rick Couch, a citizen of the United States of America, residing at 777 Woodleave Road, Bryn Mawr, PA 19010, United States of America;

and each of us, if more than one person is identified above (hereinafter "ASSIGNOR") in consideration of the sum of Ten Dollars (\$10.00), or the equivalent thereof, and other good and valuable consideration, the sufficiency of which and receipt of which are hereby acknowledged, paid to ASSIGNOR by

SHIRE LLC

a corporation organized under the laws of the State of Kentucky, United States of America, located at 9200 Brookfield Court, Florence, Kentucky 41042 (hereinafter "ASSIGNEE"), do hereby sell and assign to said ASSIGNEE, its successors and assigns, the below indicated right, title, and interest, throughout the world in and to my Invention entitled:

CONTROLLED DOSE DRUG DELIVERY SYSTEM

invented by me and described in Patent Application No. 11/383,066, filed on May 12, 2006, in the United States of America; and all patents, divisions, reissues, continuations and any extensions thereof and rights of priority therein, said interest being my entire ownership interest in the same, to be held and enjoyed by said ASSIGNEE, its successors, assigns, or other legal representatives, to the full end of the term thereof, as fully and entirely as the same would have been held and enjoyed by me if this assignment and sale had not be made;

And for the consideration aforesaid, I hereby covenant and agree to and with said ASSIGNEE, its successors and assigns, that whenever ASSIGNEE, its counsel or representative, or the counsel or representative of its successors or assigns, shall advise that an amendment to, or a division of, or any other proceeding or action in connection with an application concerning said Invention, including interference proceedings, is lawful and desirable, or that a reissue or continuation or extension of such application or patent issuing therefrom is lawful and desirable, I will sign all papers and drawings, take all rightful oaths and affidavits, and do all acts necessary or required to be done for the procurement of all lawful rights associated with the Invention, or for the reissue or continuation or extension of the same, will do all acts necessary or required to secure in said ASSIGNEE, its successors or assigns, the

title to and full benefit of all rights hereby assigned, without charge to said ASSIGNEE or its successors or assigns, but at its or their expense; and I hereby appoint every present or future officer of said ASSIGNEE as my agent to sign all such papers and to do all such necessary acts on my behalf, to the fullest extent permitted by law;

And I hereby authorize and request the Commission of Patents and Trademarks and any other granting authority to issue any Letters Patent resulting from said Invention and application(s) concerning same to said ASSIGNEE.

This assignment shall have an effective date corresponding to the last date of execution.

Rick Couch
RICHARD A.

Witness:

Name:

ACCEPTANCE BY ASSIGNEE

In connection with an assignment in any jurisdiction in which an acceptance by ASSIGNEE is required, I hereby accept this assignment on behalf of SHIRE LLC. I declare under penalty of perjury under the laws of the United States of America, and under penalty of the laws of any other jurisdiction before which this document may be presented, that (check all that apply):

was apply).	
I am an officer of the above-identified ASSIGNEE,	
I have signed this document on behalf of ASSIGNEE with the full authority of its board of directors,	
and that all the foregoing is true and correct. Dated: Octobor 19, 2000by:	
Name: Jim Harrington Title: SVP, Chief IP Counsel	

ASSIGNMENT

I, Paul Hodgkins, a citizen of Great Britain, residing at 15 Landon Way, Exton, Pa 19341, United States of America;

and each of us, if more than one person is identified above (hereinafter "ASSIGNOR") in consideration of the sum of Ten Dollars (\$10.00), or the equivalent thereof, and other good and valuable consideration, the sufficiency of which and receipt of which are hereby acknowledged, paid to ASSIGNOR by

SHIRE LLC

a corporation organized under the laws of the State of Kentucky, United States of America, located at 9200 Brookfield Court, Florence, Kentucky 41042 (hereinafter "ASSIGNEE"), do hereby sell and assign to said ASSIGNEE, its successors and assigns, the below indicated right, title, and interest, **throughout the world** in and to my Invention entitled:

CONTROLLED DOSE DRUG DELIVERY SYSTEM

invented by me and described in Patent Application No. 11/383,066, filed on May 12, 2006, in the United States of America; and all patents, divisions, reissues, continuations and any extensions thereof and rights of priority therein, said interest being my entire ownership interest in the same, to be held and enjoyed by said ASSIGNEE, its successors, assigns, or other legal representatives, to the full end of the term thereof, as fully and entirely as the same would have been held and enjoyed by me if this assignment and sale had not be made;

And for the consideration aforesaid, I hereby covenant and agree to and with said ASSIGNEE, its successors and assigns, that whenever ASSIGNEE, its counsel or representative, or the counsel or representative of its successors or assigns, shall advise that an amendment to, or a division of, or any other proceeding or action in connection with an application concerning said Invention, including interference proceedings, is lawful and desirable, or that a reissue or continuation or extension of such application or patent issuing therefrom is lawful and desirable, I will sign all papers and drawings, take all rightful oaths and affidavits, and do all acts necessary or required to be done for the procurement of all lawful rights associated with the Invention, or for the reissue or continuation or extension of the same, will do all acts necessary or required to secure in said ASSIGNEE, its successors or assigns, the

PATENT REEL: 046508 FRANCE: 08823

title to and full benefit of all rights hereby assigned, without charge to said ASSIGNEE or its successors or assigns, but at its or their expense; and I hereby appoint every present or future officer of said ASSIGNEE as my agent to sign all such papers and to do all such necessary acts on my behalf, to the fullest extent permitted by law;

And I hereby authorize and request the Commission of Patents and Trademarks and any other granting authority to issue any Letters Patent resulting from said Invention and application(s) concerning same to said ASSIGNEE.

This assignment shall have an effective date corresponding to the last date of execution.

31 Ay '06

Paul Hodgkins

Witness:

8 3106 Data:

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ACCEPTANCE BY ASSIGNEE

In connection with an assignment in any jurisdiction in which an acceptance by ASSIGNEE is required, I hereby accept this assignment on behalf of SHIRE LLC. I declare under penalty of perjury under the laws of the United States of America, and under penalty of the laws of any other jurisdiction before which this document may be presented, that (check all that apply):

	I am an officer of the above-identified ASSIGNEE,
	I have signed this document on behalf of ASSIGNEE with the full authority of its board of directors,
	and that all the foregoing is true and correct.
Dated:	October 19,0000 By:
	Name: Jim Harrington Title: SVP, Chief TP Counsel