504113122 11/29/2016

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:		NEW ASSIGNMENT	
NATURE OF CONVEYANCE:		ASSIGNMENT	
CONVEYING PARTY	DATA		
		Name	Execution Date
HOWARD HUGHES MEDICAL INSTI		ITUTE	11/22/2016
RECEIVING PARTY D			
Name:		YALE UNIVERSITY	
Street Address:		TWO WHITNEY AVENUE	
City:		EW HAVEN	
State/Country:	CONNECT	DNNECTICUT	
Postal Code:	06511	06511	
PROPERTY NUMBER	S Total: 5		
Property Type		Number	
Application Number:		72279	
PCT Number:		S2014053127	
Application Number:		72294	
Application Number:		19003	
PCT Number:		2014053406	
CORRESPONDENCE Fax Number:	DATA		
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using a fax number, i	•	-	t via US Mail.
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<i>using a fax number, i</i> Email: Correspondent Name Address Line 1:	abo ANE 450	chner@wiggin.com DREW D. BOCHNER LEXINGTON AVENUE	
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ASSIGNMENT

WHEREAS, Howard Hughes Medical Institute ("HHMI"), a Delaware corporation, has acquired all right, title and interest, including all provisional applications, Patent Cooperation Treaty ("PCT") applications, non-provisional applications, divisional applications, and continuations thereof, in the following applications ("the Inventions"):

THERAPEUTIC DNP DERIVATIVES AND METHODS USING SAME:

- 1) U.S. Provisional Application 61/872,279
- 2) PCT Application PCT/US2014/053,127
- 3) U.S. Non-Provisional Application 14/914,408

NOVEL 2,4-DINITROPHENOL FORMULATIONS AND METHODS USING SAME:

- 1) U.S. Provisional Application 61/872,294
- 2) U.S. Provisional Application 61/919,003
- 3) PCT Application PCT/US2014/053,406
- 4) U.S. Non-Provisional Application 14/911,322

WHEREAS, inventor Gerald I. Shulman, a citizen of the United States of America, having a mailing address of 2 Old Town Highway, Unit 19, East Haven, Connecticut 06512, has previously assigned all right, title and interest in the Inventions to HHMI by Confirmation of Assignment dated March 19, 2013 for the Invention THERAPEUTIC DNP DERIVATIVES AND METHODS USING SAME and recorded the same at the United States Patent and Trademark Office on November 21, 2016 at Reel/Frame 040389/0809 and by Confirmation of Assignment dated May 14, 2013 for the Invention NOVEL 2,4-DINETROPHENOL FORMULATIONS AND METHODS USING SAME and recorded at the United States Patent and Trademark Office on November 21, 2016 at Reel/Frame 040389/0988.

WHEREAS, on July 28, 2014 and December 18, 2015, subsequent to the execution of the assignments to HHMI, Gerald I. Shulman unintentionally and without deceptive intent executed assignments of his entire right, title and interest in and to the invention entitled NOVEL 2,4-DINITROPHENOL FORMULATIONS AND METHODS USING SAME to Yale University, and WHEREAS, as of said date, Gerald I. Shulman no longer possessed any right, title and

interest in and to said invention due to previously assigning the entire right, title and interest to HHMI, and THEREFORE, no right, title or interest was conveyed or assigned;

WHEREAS, on September 22, 2014, subsequent to the execution of the assignments to HHMI, Gerald I. Shulman unintentionally and without deceptive intent executed an assignment of his entire right, title and interest in and to the invention entitled THERAPEUTIC DNP DERIVATIVES AND METHODS USING SAME to Yale University, and WHEREAS, as of said date, Gerald I. Shulman no longer possessed any right, title and interest in and to said invention due to previously assigning the entire right, title and interest to HHMI, and THEREFORE, no right, title or interest was conveyed or assigned;

WHEREAS, certain employees of HHMI are hosted at Yale University and/or hold appointments as Yale University faculty members, and WHEREAS, pursuant to a written agreement between Yale University and HHMI, all intellectual property created by said certain employees at Yale University is obligated to be assigned to Yale University, subject to retention by HHMI of a fully paid-up, non-exclusive, irrevocable, worldwide research license to such intellectual property, and WHEREAS, Gerald I. Shulman is one of said certain employees;

WHEREAS, Yale University, a not-for-profit corporation organized and existing under the laws of the State of Connecticut, having a place of business at Two Whitney Avenue, New Haven Connecticut 06511, is desirous of acquiring the entire right, title and interest in and to said inventions as described in the above patent applications, for the territory of the United States and its possessions and territories, and all foreign countries, in and to the above patent applications and any and all related United States and foreign patent applications disclosing said inventions, including all provisional applications, Patent Cooperation Treaty ("PCT") applications, nonprovisional applications, divisional applications, and continuations thereof, in and to all United States and foreign patents which may be granted on any and all of said patent applications, including extensions reissues and reexamination certificates thereof;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, HHMI has sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto said Yale University, its successors, legal representatives, and assigns its entire right, title, and interest in, to and under said inventions as

described in the above patent applications, and said application and all divisions, renewals, continuations and continuations-in-part thereof, and all Letters Patent of the United States which may be granted thereon or claim priority therefrom and all reissues and extensions thereof, and all applications for Letters Patent which may hereafter be filed for said inventions as described in the above patent applications in any country or countries foreign to the United States, and all Letters Patent which may be granted for said inventions or claim priority therefrom in any country or countries foreign to the United States and all extensions, renewals, and reissues thereof, subject to retention by HHMI of a fully paid-up, non-exclusive, irrevocable, worldwide research license to such intellectual property; and HHMI hereby authorizes and requests the Commissioner of Patents of the United States and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said inventions as described in the above patent applications to said Yale University, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND HHMI HEREBY further assigns and transfer to Yale University all priority rights derived from such inventions as described in the above patent applications therefore by virtue of the International Convention for the Protection of Industrial Property for any and all member countries of the aforesaid International Convention, subject to retention by HHMI of a fully paidup, non-exclusive, irrevocable, worldwide research license to such intellectual property, and does hereby assign and transfer to Yale University the sole right to file further applications for patents under the patent laws of any country of the world based on any inventions disclosed in said application as fully and entirely as the same would have been held by HHMI had this assignment not been made.

AND HHMI HEREBY covenants that it has full right to convey the entire interest herein assigned, and that HHMI has not executed, and will not execute, any agreement in conflict herewith.

AND Gerald I. Shulman hereby covenants that the previous assignment of his rights, title and interest to Yale University was erroneous, improper, and ineffective.

AND HHMI HEREBY further covenants and agree that it will communicate to said Yale University, its successors, legal representatives and assigns, any facts known to HHMI respecting said inventions, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuations, continuations-in-part and reissue applications, make all rightful oaths, and generally do everything possible to aid said Yale University, its successors, legal representatives and assigns to obtain and enforce proper patent protection for said inventions in all countries.

THE REMAINDER OF THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK. SIGNATURE PAGE FOLLOWS.

IN TESTIMONY WHEREOF, I hereunto set my hands the day and year set opposite my signature and acknowledge that the above statements are a true and accurate representation of the facts.

Date: <u>NOV. 22,</u> 2016

Heidi E. Henning, Vice President & General Counsel FOR HHMI

IN TESTIMONY WHEREOF, I hereunto set my hands the day and year opposite my signature, and acknowledge that the above statements are a true and accurate representation of the facts.

DR. GERALD I. SHULMAN

Date: 11/23, 2016

IN TESTIMONY WHEREOF, I hereunto set my hands the day and year opposite my signature, and acknowledge that the above statements are a true and accurate representation of the facts.

Date: 2300 2016

Jon Soderstrom Manging Director OCR FOR YALE UNIVERSITY

RECORDED: 11/29/2016