

TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

ETAS ID: TM297614

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	SECURITY INTEREST		
CONVEYING PARTY DATA			
Name	Formerly	Execution Date	Entity Type
LINEAGEN, INC.		02/28/2014	CORPORATION: DELAWARE
RECEIVING PARTY DATA			
Name:	Silicon Valley Bank		
Street Address:	3003 TASMAN DR.		
City:	SANTA CLARA		
State/Country:	CALIFORNIA		
Postal Code:	95054		
Entity Type:	CORPORATION: CALIFORNIA		
PROPERTY NUMBERS Total: 5			
Property Type	Number	Word Mark	
Serial Number:	85095157	FIRSTSTEP	
Registration Number:	4142603	SMARTPATH	
Registration Number:	4039525	FIRSTSTEPDX	
Registration Number:	3143447	LINEAGEN	
Registration Number:	4060745	OPENING AUTISM	
CORRESPONDENCE DATA			
Fax Number:	4048853900		
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>			
Phone:	4048853770		
Email:	andrew.regan@troutmansanders.com		
Correspondent Name:	ANDREW REGAN PHD		
Address Line 1:	600 Peachtree St NE		
Address Line 2:	#5200		
Address Line 4:	ATLANTA, GEORGIA 30308		
ATTORNEY DOCKET NUMBER:	220763.001558		
NAME OF SUBMITTER:	ANDREW REGAN PHD		
SIGNATURE:	/ANDREW REGAN 66970/		
DATE SIGNED:	03/10/2014		
Total Attachments: 11			

CH \$140.00 85095157

source=SVB_Lineagen (Executed IP Agreement)#page1.tif
source=SVB_Lineagen (Executed IP Agreement)#page2.tif
source=SVB_Lineagen (Executed IP Agreement)#page3.tif
source=SVB_Lineagen (Executed IP Agreement)#page4.tif
source=SVB_Lineagen (Executed IP Agreement)#page5.tif
source=SVB_Lineagen (Executed IP Agreement)#page6.tif
source=SVB_Lineagen (Executed IP Agreement)#page7.tif
source=SVB_Lineagen (Executed IP Agreement)#page8.tif
source=SVB_Lineagen (Executed IP Agreement)#page9.tif
source=SVB_Lineagen (Executed IP Agreement)#page10.tif
source=SVB_Lineagen (Executed IP Agreement)#page11.tif

INTELLECTUAL PROPERTY SECURITY AGREEMENT

THIS INTELLECTUAL PROPERTY SECURITY AGREEMENT ("Agreement") is entered into as of the Effective Date by and between SILICON VALLEY BANK, a California corporation ("Bank") and LINEAGEN, INC., a Delaware corporation ("Grantor").

RECITALS

EXECUTED FEB. 28, 2014

A. Bank has agreed to make certain advances of money and to extend certain financial accommodation to Grantor (the "Loans") in the amounts and manner set forth in that certain Loan and Security Agreement by and between Bank and Grantor dated the Effective Date (as the same may be amended, modified, supplemented or restated from time to time, the "Loan Agreement"; capitalized terms used herein are used as defined in the Loan Agreement). Bank is willing to make the Loans to Grantor, but only upon the condition, among others, that Grantor shall grant to Bank a security interest in certain Copyrights, Trademarks, Patents, and Mask Works (as each term is described below) to secure the obligations of Grantor under the Loan Agreement.

B. Pursuant to the terms of the Loan Agreement, Grantor has granted to Bank a security interest in all of Grantor's right, title and interest, whether presently existing or hereafter acquired, in, to and under all of the Collateral.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound, as collateral security for the prompt and complete payment when due of its obligations under the Loan Agreement, Grantor hereby represents, warrants, covenants and agrees as follows:

AGREEMENT

1. Grant of Security Interest. To secure its obligations under the Loan Agreement, Grantor grants and pledges to Bank a security interest in all of Grantor's right, title and interest in, to and under its intellectual property (all of which shall collectively be called the "Intellectual Property Collateral"), including, without limitation, the following:

(a) Any and all copyright rights, copyright applications, copyright registrations and like protections in each work or authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret, now or hereafter existing, created, acquired or held, including without limitation those set forth on Exhibit A attached hereto (collectively, the "Copyrights");

(b) Any and all trade secrets, and any and all intellectual property rights in computer software and computer software products now or hereafter existing, created, acquired or held;

(c) Any and all design rights that may be available to Grantor now or hereafter existing, created, acquired or held;

(d) All patents, patent applications and like protections including, without limitation, improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same, including without limitation the patents and patent applications set forth on Exhibit B attached hereto (collectively, the “**Patents**”);

(e) Any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Grantor connected with and symbolized by such trademarks, including without limitation those set forth on Exhibit C attached hereto (collectively, the “**Trademarks**”);

(f) All mask works or similar rights available for the protection of semiconductor chips, now owned or hereafter acquired, including, without limitation those set forth on Exhibit D attached hereto (collectively, the “**Mask Works**”);

(g) Any and all claims for damages by way of past, present and future infringements of any of the rights included above, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the intellectual property rights identified above;

(h) All licenses or other rights to use any of the Copyrights, Patents, Trademarks, or Mask Works and all license fees and royalties arising from such use to the extent permitted by such license or rights;

(i) All amendments, extensions, renewals and extensions of any of the Copyrights, Trademarks, Patents, or Mask Works; and

(j) All proceeds and products of the foregoing, including without limitation all payments under insurance or any indemnity or warranty payable in respect of any of the foregoing.

2. Recordation. Grantor authorizes the Commissioner for Patents, the Commissioner for Trademarks and the Register of Copyrights and any other government officials to record and register this Agreement upon request by Bank.

3. Loan Documents. This Agreement has been entered into pursuant to and in conjunction with the Loan Agreement, which is hereby incorporated by reference. The provisions of the Loan Agreement shall supersede and control over any conflicting or inconsistent provision herein. The rights and remedies of Bank with respect to the Intellectual Property Collateral are as provided by the Loan Agreement and related documents, and nothing in this Agreement shall be deemed to limit such rights and remedies.

4. Execution in Counterparts. This Agreement may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a signature page to this Agreement by facsimile or in electronic (i.e., “pdf” or “tif” format) shall be effective as delivery of a manually executed counterpart of this Agreement.

5. Successors and Assigns. This Agreement will be binding on and shall inure to the benefit of the parties hereto and their respective successors and assigns.

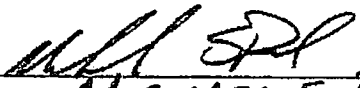
6. Governing Law. This Agreement and any claim, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement and the transactions contemplated hereby and thereby shall be governed by, and construed in accordance with, the laws of the United States and the State of California, without giving effect to any choice or conflict of law provision or rule (whether of the State of California or any other jurisdiction).

[Signature page follows.]

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.

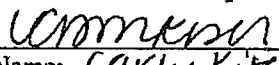
GRANTOR:

LINEAGEN, INC.

By: 
Name: MICHAEL S. PAUL
Title: CHIEF EXECUTIVE OFFICER

BANK:

SILICON VALLEY BANK

By: 
Name: CARLY KIDER
Title: Vicepresident

[Signature Page to Intellectual Property Security Agreement]

EXHIBIT A

Copyrights

Description	Registration/ Application Number	Registration/ Application Date	Outstanding Security Interest
NONE	N/A	N/A	N/A

Exhibit A

Active 21731774v2 220763.001558

TRADEMARK
REEL: 005233 FRAME: 0945

EXHIBIT B

Patents

Description	Registration / Application Number	Registration / Application Date	Outstanding Security Interest
COPD BIOMARKER SIGNATURES	US 12/921997	February 27, 2009	
AUTISM ASSOCIATED GENETIC MARKERS	US 12/617636	November 12, 2009	
METHODS FOR IDENTIFICATION AND PREDICTION OF MULTIPLE SCLEROSIS DISEASE AND THERAPY RESPONSE	US 12/563995	September 21, 2009	
RISK FACTORS OF CIGARETTE SMOKE- INDUCED SPIROMETRIC PHENOTYPES	EP 11733545	January 18, 2011	
GENE BIOMARKERS OF LUNG FUNCTION	EP 11728543	January 4, 2011	
DNA METHYLATION BIOMARKERS OF LUNG FUNCTION	EP 11728576	January 4, 2011	
BIOMARKERS OF LUNG FUNCTION	EP 11728575	January 4, 2011	

Exhibit B

Active 21731774v2 220763.001558

TRADEMARK
REEL: 005233 FRAME: 0946

AUTISM ASSOCIATED GENETIC MARKERS	EP 09826774	November 12, 2009	
RISK FACTORS OF CIGARETTE SMOKE-INDUCED SPIROMETRIC PHENOTYPES	PCT/US2011/021593	January 18, 2011	
GENE BIOMARKERS OF LUNG FUNCTION	PCT/US2011/000016	January 4, 2011	
DNA METHYLATION BIOMARKERS OF LUNG FUNCTION	PCT/US2011/020152	January 4, 2011	
METABOLOMICS-BASED BIOMARKERS FOR LUNG FUNCTION	PCT/US2011/020149	January 4, 2011	
BIOMARKERS OF LUNG FUNCTION	PCT/US2011/020151	January 4, 2011	
METHODS FOR IDENTIFICATION AND PREDICTION OF MULTIPLE SCLEROSIS DISEASE AND THERAPY RESPONSE	EP 09815357	September 21, 2009	
COPD BIOMARKER SIGNATURES	CN 200980113863.7	February 27, 2009	

COPD BIOMARKER SIGNATURES	EP 09718959	February 27, 2009	
AUTISM ASSOCIATED GENETIC MARKERS	PCT/US2009/064252	November 12, 2009	
AUTISM ASSOCIATED GENETIC MARKERS	CA 2743542	November 12, 2009	
METHODS FOR IDENTIFICATION AND PREDICTION OF MULTIPLE SCLEROSIS DISEASE AND THERAPY RESPONSE	PCT/US2009/057740	September 21, 2009	
METHODS FOR IDENTIFICATION AND PREDICTION OF MULTIPLE SCLEROSIS DISEASE AND THERAPY RESPONSE	CA 2729978	September 21, 2009	
COPD BIOMARKER SIGNATURES	PCT/US2009/035376	February 27, 2009	
COPD BIOMARKER SIGNATURES	CA 2718251	February 27, 2009	

APPARATUS, COMPOSITIONS, AND METHODS FOR ASSESSMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE PROGRESSION AMONG RAPID AND SLOW DECLINE CONDITIONS	EP 07812446	June 28, 2007	
APPARATUS, COMPOSITIONS, AND METHODS FOR ASSESSMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE PROGRESSION AMONG RAPID AND SLOW DECLINE CONDITIONS	PCT/US2007/072409	June 28, 2007	
APPARATUS, COMPOSITIONS, AND METHODS FOR ASSESSMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE PROGRESSION AMONG RAPID AND SLOW DECLINE CONDITIONS	CA 2655685	June 28, 2007	

EXHIBIT C

Trademarks

Description	Registration/ Application Number	Registration/ Application Date	Outstanding Security Interest
FIRSTSTEP	US 85095157	July 28, 2010	
SMARTPATH	US 4142603	May 15, 2012	
FIRSTSTEPDX	US 4039525	October 11, 2011	
LINEAGEN	US 3143447	September 12, 2006	
OPENING AUTISM	US 4060745	November 22, 2011	

Exhibit C

Active 21731774v2 220763.001558

TRADEMARK
REEL: 005233 FRAME: 0950

EXHIBIT D

Mask Works

Description	Registration/ Application Number	Registration/ Application Date	Outstanding Security Interest
NONE	N/A	N/A	N/A

Exhibit D

Active 21731774v2 220763.001558