

# PATENT ASSIGNMENT

Electronic Version v1.1  
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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY AGREEMENT
<b>CONVEYING PARTY DATA</b>	
Name	Execution Date
Verenium Corporation, a Delaware corporation	10/19/2011
<b>RECEIVING PARTY DATA</b>	
Name:	Comerica Bank, a Texas banking association
Street Address:	39200 Six Mile Road
Internal Address:	MC 7578
City:	Livonia
State/Country:	MICHIGAN
Postal Code:	48152
<b>PROPERTY NUMBERS Total: 2</b>	
Property Type	Number
Application Number:	13053404
Application Number:	13169853
<b>CORRESPONDENCE DATA</b>	
Fax Number:	(313)496-8454
Phone:	3134967562
Email:	spano@millercafield.com
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>	
Correspondent Name:	Kristen I. Spano
Address Line 1:	150 West Jefferson Avenue
Address Line 2:	Suite 2500
Address Line 4:	Detroit, MICHIGAN 48226
ATTORNEY DOCKET NUMBER:	125055-986
NAME OF SUBMITTER:	Kristen I. Spano
Total Attachments: 17	

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**PATENT**  
**REEL: 027170 FRAME: 0824**

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## INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement (the "Agreement") is made as of October 19, 2011, by and between **VERENIUM CORPORATION**, a Delaware corporation ("Grantor"), and **COMERICA BANK**, a Texas banking association ("Secured Party").

### RECITALS

A. Secured Party has agreed to lend to Grantor certain funds (the "Loan"), and Grantor desires to borrow such funds from Secured Party pursuant to the terms of that certain Loan and Security Agreement, dated as of October 19, 2011, (the "Loan Agreement"), the Loan Documents and the Ex-Im Facility Documents. All initially capitalized terms used herein without definition shall have the meanings ascribed to them in the Loan Agreement.

B. In order to induce Secured Party to enter into the Loan Agreement, the Loan Documents and the Ex-Im Facility Documents, Grantor has agreed to grant a security interest in certain intangible property to Secured Party for purposes of securing the obligations of Grantor to Secured Party.

NOW, THEREFORE, THE PARTIES HERETO AGREE AS FOLLOWS:

1. Grant of Security Interest. As collateral security for the prompt repayment of any and all Obligations and to secure prompt performance by Grantor of each of its covenants and duties to Secured Party under the Loan Documents (other than the Warrant) and the Ex-Im Facility Documents, Grantor hereby grants a security interest and mortgage to Secured Party, as security, in and to Grantor's entire right, title and interest in, to and under the following (all of which shall collectively be called the "Intellectual Property Collateral"), it being understood that security interests in the Intellectual Property Collateral shall not be perfected in any jurisdiction outside of the United States:

(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 which 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 (other than the BP Patents) (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) Any and all claims for damages by way of past, present and future infringement 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;

(g) All licenses (other than the Japanese License), including, but not limited to the BP License and all other rights to use any of the Copyrights, Patents or Trademarks, and all license fees and royalties arising from such use to the extent permitted by such license or rights; and

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

(i) 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.

The Secured Party's security interest in the Intellectual Property Collateral shall remain in effect until Payment-in-Full.

2. Authorization and Request. Grantor authorizes and requests that the Register of Copyrights and the Commissioner of Patents and Trademarks record this security agreement.

3. Covenants and Warranties. All covenants, representations and warranties contained in the Loan Agreement are hereby incorporated by referenced. Grantor further represents, warrants, covenants and agrees as follows:

(a) Performance of this Agreement does not conflict with or result in a breach of any agreement to which Grantor is party or by which Grantor is bound, except to the extent that certain intellectual property agreements prohibit the assignment of the rights thereunder to a third party without the licensor's or other party's consent and this Agreement constitutes an assignment, or except to the extent such default could not reasonably be expected to cause a Material Adverse Effect;

(b) Grantor shall register or cause to be registered (to the extent not already registered) with the United States Patent and Trademark Office or the United States Copyright Office, as applicable, those registerable intellectual property rights listed on Exhibits A, B and C hereto within thirty (30) days of the date of this Agreement;

(c) This Agreement creates in favor of Secured Party, and in the case of after acquired Intellectual Property Collateral, at the time Grantor first has rights in such after acquired Intellectual Property Collateral this Agreement will create in favor of Secured Party, a valid and perfected first priority security interest in the Intellectual Property Collateral in the United States securing the payment and performance of the obligations evidenced by the Loan Agreement upon making the filings referred to in clause (i) below, subject to any Permitted Liens;

(d) Except for, and upon, the filing with the United States Patent and Trademark office with respect to the Patents and Trademarks and the Register of Copyrights with respect to the Copyrights such documents as are necessary to perfect the security interests created hereunder, and except as has been already made or obtained, no authorization, approval or other action by, and no notice to or filing with, any U.S. governmental authority or U.S. regulatory body is required either (i) for the grant by Grantor of the security interest granted hereby or for the execution, delivery or performance of this Agreement by Grantor in the U.S. or (ii) for the perfection in the United States or the exercise by Secured Party of its rights and remedies hereunder;

(e) No representation, warranty or other statement made by Grantor or other information provided in any certificate or written statement furnished, whether now or later, to Secured Party with respect to the Intellectual Property Collateral taken together with all such certificates and written statements furnished to

Secured Party contains any untrue statement of a material fact or omits to state a material fact necessary in order to make the statements contained in such certificates or statements not misleading;

(f) Grantor shall not enter into any agreement that would materially impair or conflict with Grantor's obligations hereunder without Secured Party's prior written consent, which consent shall not be unreasonably withheld. Grantor shall not permit the inclusion in any material contract to which it becomes a party of any provisions that could or might in any way prevent the creation of a security interest in Grantor's rights and interests in any property included within the definition of the Intellectual Property Collateral acquired under such contracts, except that certain contracts may contain anti-assignment provisions that could in effect prohibit the creation of a security interest in such contracts if Grantor is required, in its commercially reasonable judgment, to accept such provisions; and

(g) Upon any executive officer of Grantor obtaining actual knowledge thereof, Grantor will promptly notify Secured Party in writing of any event that materially adversely affects the value of any Intellectual Property Collateral, the ability of Grantor to dispose of any Intellectual Property Collateral or the rights and remedies of Secured Party in relation thereto, including the levy of any legal process against any of the Intellectual Property Collateral.

4. Secured Party's Rights. Secured Party shall have the right, but not the obligation, to take, at Grantor's sole expense, any actions that Grantor is required under this Agreement to take but which Grantor fails to take, after fifteen (15) days' notice to Grantor. Grantor shall reimburse and indemnify Secured Party for all reasonable costs and reasonable expenses incurred in the reasonable exercise of its rights under this Section 4, provided that Grantor's liability for expenses incurred in connection with any audits (including any under Section 6.9 of the Loan Agreement) shall be limited to the extent provided for in Section 6.2 of the Loan Agreement.

5. Inspection Rights. Grantor hereby grants to Secured Party and its employees, representatives and agents the right to visit, during reasonable hours upon prior reasonable written notice to Grantor, any of Grantor's plants and facilities that manufacture, install or store products (or that have done so during the prior six month period) that are sold utilizing any of the Intellectual Property Collateral, and to inspect the products and quality control records relating thereto upon reasonable written notice to Grantor and as often as may be reasonably requested, in each case, subject to the limitations on inspections set forth in the Loan Agreement.

6. Further Assurances; Attorney-in-Fact.

(a) On a continuing basis, Grantor will make, execute, acknowledge and deliver, and file and record in the proper filing and recording places in the United States, all such instruments, including appropriate financing and continuation statements and collateral agreements and filings with the United States Patent and Trademark Office and the Register of Copyrights, and take all such action as may reasonably be deemed necessary or advisable, or as reasonably requested by Secured Party, to perfect Secured Party's security interest in all Copyrights, Patents and Trademarks and otherwise to carry out the intent and purposes of this Agreement, or for assuring and confirming to Secured Party the grant or perfection of a security interest in all Intellectual Property Collateral.

(b) Grantor hereby irrevocably appoints Secured Party as Grantor's attorney-in-fact, with full authority in the place and stead of Grantor and in the name of Grantor, from time to time in Secured Party's discretion, to take any action and to execute any instrument which Secured Party may deem necessary or advisable to accomplish the purposes of this Agreement, including (i) to modify, in its sole discretion, this Agreement without first obtaining Grantor's approval of or signature to such modification by amending Exhibit A, Exhibit B and Exhibit C, thereof, as appropriate, to include reference to any right, title or interest in any Copyrights, Patents or Trademarks acquired by Grantor after the execution hereof or to delete any reference to

any right, title or interest in any Copyrights, Patents or Trademarks in which Grantor no longer has or claims any right, title or interest, (ii) to file, in its sole discretion, one or more financing or continuation statements and amendments thereto, relative to any of the Intellectual Property Collateral without the signature of Grantor where permitted by law, and (iii) after the occurrence of an Event of Default under this Agreement, to transfer the Intellectual Property Collateral into the name of Secured Party or a third party to the extent permitted under the California Uniform Commercial Code.

7. Events of Default. The occurrence of any default or Event of Default under the Loan Agreement, the Loan Documents or the Ex-Im Facility Documents shall constitute an Event of Default under this Agreement.

8. Remedies. Upon the occurrence and continuance of an Event of Default under this Agreement, Secured Party shall have the right to exercise all the remedies of a secured party under the California Uniform Commercial Code or as otherwise provided for in the Loan Documents, including without limitation the right to require Grantor to assemble the Intellectual Property Collateral and to make it available to Secured Party as Secured Party may designate. Secured Party shall have a nonexclusive, royalty free license to use the Copyrights, Patents and Trademarks to the extent reasonably necessary to permit Secured Party to exercise its rights and remedies upon the occurrence of an Event of Default under this Agreement. Grantor will pay any expenses (including reasonable attorneys' fees) incurred by Secured Party in connection with the exercise of any of Secured Party's rights hereunder, including without limitation any expense incurred in disposing of the Intellectual Property Collateral. All of Secured Party's rights and remedies with respect to the Intellectual Property Collateral shall be cumulative.

9. Indemnity. Grantor agrees to defend, indemnify and hold harmless Secured Party and its officers, employees, and agents against: (a) all obligations, demands, claims, and liabilities claimed or asserted by any other party in connection with the transactions contemplated by this Agreement; and (b) all losses or expenses in any way suffered, incurred, or paid by Secured Party as a result of or in any way arising out of, following or consequential to transactions between Secured Party and Grantor, whether under this Agreement or otherwise (including without limitation reasonable attorneys' fees and reasonable expenses), except for obligations, demands, claims, liabilities, losses or expenses arising from or out of Secured Party's or its officers', employees', or agents' gross negligence or willful misconduct.

10. Course of Dealing. No course of dealing, nor any failure to exercise, nor any delay in exercising any right, power or privilege hereunder shall operate as a waiver thereof.

11. Attorneys' Fees. If any action relating to this Agreement is brought by either party hereto against the other party, the prevailing party shall be entitled to recover reasonable attorneys' fees, costs and disbursements.

12. Amendments. This Agreement may be amended only by a written instrument signed by both parties hereto.

13. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute the same instrument.

14. California Law and Jurisdiction; Jury Waiver. This Agreement shall be governed by the laws of the State of California, without regard for choice of law provisions. Grantor and Secured Party consent to the exclusive jurisdiction of any state or federal court located in Santa Clara County, California. GRANTOR AND SECURED PARTY EACH WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF THE LOAN DOCUMENTS, THIS AGREEMENT, OR ANY OF THE TRANSACTIONS CONTEMPLATED HEREIN, INCLUDING

CONTRACT CLAIMS, TORT CLAIMS, BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW OR STATUTORY CLAIMS.

*[end of Agreement; signatures on next page]*

IN WITNESS WHEREOF, the parties hereto have executed this Intellectual Property Security Agreement on the day and year first above written.

GRANTOR:

Address of Grantor:

4955 Directors Place  
San Diego, CA 92121

**VERENIUM CORPORATION,**  
a Delaware corporation

By: 

Name: Jeff Black  
Its: Chief Financial Officer

Attn:

SECURED PARTY:

Address of Secured Party:

39200 Six Mile Road, MC 7578  
Livonia, MI 48152

**COMERICA BANK**

By: 

Name: Lake T. McGuire  
Its: Vice President



EXHIBIT A

Copyrights

None.

EXHIBIT B

Patents

<u>Patent/Serial No.</u>	<u>Title</u>
10547956	Hydrolases, Nucleic Acids Encoding Them And Methods For Making And Using Them
11575066	Compositions and Methods for Making and Modifying Oils
11817865	Hydrolases, Nucleic Acids Encoding Them and Methods for Improving Paper Strength
11817997	Lyase Enzymes, Nucleic Acids Encoding Them and Methods for Making and Using Them
11868909	Nitrilases and Methods for Making and Using Them
12032337	Chemoenzymatic Methods for the Synthesis of Statins and Statin Intermediates
12202119	Hydrolases, Nucleic Acids Encoding Them and Methods for Making and Using Them
12278108	Esterases and Related Nucleic Acids and Methods
12281052	Aldolases, Nucleic Acids Encoding Them and Methods for Making and Using Them
12303088	Lyase Enzymes, Nucleic Acids Encoding Them and Methods for Making and Using Them
12439459	Laccases for Bio-Bleaching
12442207	Phytases, Nucleic Acids Encoding Them and Methods for Making and Using Them

12442255	Phospholipases, Nucleic Acids Encoding Them and Methods for Making and Using Them
12499698	Pectate Lyases, Nucleic Acids Encoding Them and Methods for Making and Using Them
12520523	Amylases and Glucoamylases, Nucleic Acids Encoding Them and Methods for Making and Using Them
12529340	Nitrilases, Nucleic Acids Encoding Them and Methods for Making and Using Them
12567550	Enzymes Having Alpha Amylase Activity and Methods of Making and Using Them
12683906	Dehalogenases, Nucleic Acids Encoding Them and Methods for Making and Using Them
12697907	Amylases, And Methods for used in Starch Processing
12742643	Compositions and Methods for Making Androstenediones
12756079	Amylases, Nucleic Acids Encoding Them and Methods for Making and Using Them
12763198	Methods for Making Simvastatin and Intermediates
12764844	Laccases, Nucleic Acids Encoding Them and Methods for Making and Using Them
12773317	Nitrilases, Nucleic Acids Encoding Them and Methods for Making and Using Them
12810057	Transferases and Oxidoreductases, Nucleic Acids Encoding them and methods for making and using them
12810067	Isomerases, Nucleic Acids Encoding them and methods for making and using them

12822413	Amylases, Nucleic Acids Encoding them and methods for making and using them
12830157	Polymerase
5356801	Recombinant DNA Encoding a Desulfurization Biocatalyst
5496729	Process for the Desulfurization and the Desalting of a Fossil Fuel
5510265	Multistage Process for Deep Desulfurization of a Fossil Fuel
5772901	Oil/Water/Biocatalyst Three Phase Separation Process
5814473	Transaminases and Aminotransferases
5846813	DSZD Utilization in Desulfurization of DBT by Rhodococcus SP. IGTS8
5876997	Novel Phytase
5877001	Amidase
5879914	Recombinant DNA Encoding a Desulfurization Biocatalyst
5925749	Carboxymethyl Cellulase from Thermotoga Maritima
5939300	Catalases
5948666	Isolation and Identification of Polymerases
5952208	N DSZ Gene Expression in Pseudomonas
5962258	Carboxymethyl Cellulase from Thermotoga Maritima
5962283	Transaminases and Aminotransferases
5985646	Amidase
6004796	Amidase

6008032	Carboxymethyl Cellulase from Thermotoga Maritima
6013509	Transaminases and Aminotransferases
6071738	CONVERSION OF ORGANOSULFUR COMPOUNDS TO OXYORGANOSULFUR COMPOUNDS FOR DESULFURIZATION OF FOSSIL FUELS
6074860	Catalases
6110719	Novel Phytase
6133016	Sphingomonas Biodesulfurization Catalyst
6136583	Amidase
6183740	Recombinant Bacterial Phytases and Uses Thereof
6190897	Novel Phytase
6245547	Carboxymethyl Cellulase from Thermotoga Maritima
6303562	Compositions comprising 2-(2- hydroxyphenyl)benzenesulfinate and alkyl-substituted derivatives thereof
6410290	Catalases
6465204	Amidase
6492511	Isolation and Identification of Novel Polymerases
6500659	Amidase
6632937	Nucleic Acids and Proteins From Cenarchaeum Symbiosum
6673552	METHODS FOR PURIFYING ANNEALED DOUBLE-STRANDED OLIGONUCLEOTIDES LACKING BASE PAIR MISMATCHES OR NUCLEOTIDE GAPS
6720014	Recombinant Bacterial Phytases and

	Uses Thereof
6855365	Recombinant Bacterial Phytases and Uses Thereof
6943001	Epoxide Hydrolases, Nucleic Acids Encoding Them and Methods for Making and Using Them
6979733	Epoxide Hydrolases, Nucleic Acids Encoding Them and Methods of Making and Using Them
7049101	Enzymes Having High Temperature Polymerase Activity and Methods of Use Thereof
7056703	Polypeptides having Polymerase Activity and Methods of Use Thereof
7078035	Phytases, Nucleic Acids Encoding Them and Methods for Making and Using them
7078504	Enzymes Having Dehgalogenase Activity and Methods of Use Thereof
7226771	Phospholipases, Nucleic Acids Encoding Them and Methods for Making and Using them
7232672	P450 Enzymes, Nucleic Acids Encoding Them and Methods for Making and Using them
7232677	Phytase Expression Systems and Methods of Making and Using Them
7273740	Enzymes Having Alpha Amylase Activity and Methods of Use Thereof
7288400	Nucleic Acids Encoding Esterases and Methods of Making and Using Them
7300775	Methods for Producing Alpha- Substituted Carboxylic Acids Using Nitrilases and Strecker Reagents
7323336	Enzymes Having Alpha Amylase Activity and Methods of Use Thereof
7407677	Enzymes Having Alpha Amylase

Activity and Methods of Use Thereof

7414119	Aldolases, Nucleic Acids Encoding Them and Methods for Making and Using them
7416874	Recombinant Bacterial Phytases and Uses Thereof
7422876	Methods for Generating Cellulases
7432097	Phytases, Nucleic Acids Encoding Them and Methods of Making and Using Them
7432098	Phytases and Methods for Making and Using Them
7452706	Recombinant Bacterial Phytases and Uses Thereof
7521216	Nitrilases and Methods for Making and Using Them
7560126	Amylases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7592434	Pectate Lyases, Nucleic Encoding Them and Methods for Making and Using Them
7608445	Nitrilases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7642079	Proteases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7651849	Nitrilases
7659102	Amylases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7666633	Enzymes Having Alpha Amylase Activity and Methods of Making and Using Them
7671189	Enzymes Having Dehalogenase

Activity and Methods of Use Thereof

7700329	Methods for Making Simvastatin and Intermediates
7741089	Laccases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7741092	Amylases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7759093	Amylases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7781198	Polymerase – Encoding Nucleic Acids and Methods of Making and Using Them
7811804	Nitrilases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7824895	Phytases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7863031	Phytases and Methods of Making and Using Them
7932064	Processes for Making @-Ethyl 4-Cyano-3-Hydroxybutyric Acid
7943360	Phospholipases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7977080	Phospholipases, Nucleic Acids Encoding Them and Methods for Making and Using Them
7981844	Methods for the Manufacture of Pure Single Enantiomer Compounds and for Selecting Enantioselective Enzymes
7993901	Nitrilases and Methods for Making and Using Them
13058584	Hydrolases, Nucleic Acids Encoding



Them and Methods For Making and  
Using Them

EXHIBIT C

Trademarks

<u>Trademark</u>	<u>Serial/Reg. No.</u>
DIVERSA	2396696
PYROLASE	2474025
LUMINASE	3142892
COTTONASE	2993233
ACCENTUASE	3490178
PURIFINE	3308380
FUELZYME	3373534
THE NATURE OF ENERGY	3562414
VERETASE	3815450
VERENIUM	3773475
XYLATHIN	3935089
VERENIUM AND DESIGN	3706903
THE ENERGY OF NATURE	85086994

## EXHIBIT B

Patent/Serial No.	Title
13053404	Processes for Making [R]-Ethyl 4-Cyano-3 Hydroxybutyric Acid
13090682	PHOSPHOLIPASES, NUCLEIC ACIDS ENCODING THEM AND METHODS FOR MAKING AND USING THEM
13103276	Compositions and Methods for Enzymatic Decolorization of Chlorophyll
13165663	GROWTH SELECTION METHOD
13169853	Nucleic Acids Encoding Nitrilases
13236862	Nitrilases, Nucleic Acids Encoding Them and Methods For Making and Using Them
13238227	NITRILASES AND METHODS FOR MAKING AND USING THEM
61476393	AMIDASE ENZYMES

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