

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT6120619

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	RELEASE OF SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
PERCEPTIVE CREDIT HOLDINGS, LP	05/22/2020

RECEIVING PARTY DATA

Name:	VARIATION BIOTECHNOLOGIES (US), INC.
Street Address:	222 THIRD STREET, SUITE 2241
City:	CAMBRIDGE
State/Country:	MASSACHUSETTS
Postal Code:	02142

PROPERTY NUMBERS Total: 32

Property Type	Number
Patent Number:	7118874
Patent Number:	8029797
Patent Number:	7807173
Application Number:	14161842
Application Number:	13377365
Application Number:	13377371
Application Number:	61289603
Application Number:	61289586
Application Number:	13808155
Application Number:	61289560
Application Number:	61289576
Application Number:	61317421
Application Number:	61317418
Application Number:	13979322
Application Number:	13979317
Application Number:	13068847
Application Number:	13104995
Application Number:	13111012
Application Number:	13144722
Patent Number:	6140114

PATENT

Property Type	Number
Patent Number:	8673612
Application Number:	10527422
Application Number:	12097347
Application Number:	12097346
Application Number:	13072768
Application Number:	12006367
Application Number:	11005772
Application Number:	11005769
Application Number:	10033812
Application Number:	09155489
Application Number:	08064488
Application Number:	06092046

CORRESPONDENCE DATA

Fax Number: (415)693-2000

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ATTORNEY DOCKET NUMBER: 336703-107

NAME OF SUBMITTER: C. RHEM

SIGNATURE: /CR/

DATE SIGNED: 05/22/2020

Total Attachments: 29

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RELEASE OF SECURITY INTEREST IN INTELLECTUAL PROPERTY

THIS RELEASE OF SECURITY INTEREST IN INTELLECTUAL PROPERTY (this “Release”) is made this 22nd day of May, 2020, by PERCEPTIVE CREDIT HOLDINGS, LP, and PCOF 1, LLC (each a “Secured Party” and, collectively, the “Secured Parties”).

WHEREAS, reference is made to a credit agreement under which that:

(i) certain Trademark Security Agreement dated July 25, 2014, was recorded on August 8, 2014, in the United States Patent and Trademark Office commencing at Reel No. 005340, Frame 0387 by and among Variation Biotechnologies (US), Inc., a Delaware corporation, VBI Vaccines (Delaware), Inc., and Variation Biotechnologies Inc. (collectively, “Variation Biotech”), and a Secured Party (the “Trademark Security Agreement”),

(ii) certain Patent Security Agreement dated July 25, 2014 was recorded on August 8, 2014, in the United States Patent and Trademark Office commencing at Reel No. 033501, Frame 0329 by and among Variation Biotech and a Secured Party (the “Patent Security Agreement”),

(iii) certain Amended and Restated Patent Security Agreement dated December 6, 2016, was recorded December 20, 2016, in the United States Patent and Trademark Office commencing at Reel No. 041038, Frame 0668 by and among Variation Biotech and a Secured Party (the “Amended & Restated Patent Security Agreement”), and

(iv) certain Amended and Restated Trademark Security Agreement dated December 6, 2016, was recorded December 19, 2016, in the United States Patent and Trademark Office commencing at Reel No. 005939, Frame 0976 by and among Variation Biotech and a Secured Party (the “Amended & Restated Trademark Security Agreement”)

(wherein the Trademark Security Agreement, the Patent Security Agreement, the Amended & Restated Patent Security Agreement, and the Amended & Restated Trademark Security Agreement, collectively, as amended, supplemented and/or modified to date, are the “IP Security Agreements”). Capitalized terms used herein and not otherwise defined shall have the meanings ascribed thereto in the IP Security Agreements, as applicable.

WHEREAS, under the Trademark Security Agreement and the Amended & Restated Trademark Security Agreement, Variation Biotech granted to one or more Secured Parties a security interest in and continuing lien on Variation Biotech’s right, title and interest in, to and under the trademark rights, including those set forth on Schedule A attached hereto, and all extensions and renewals thereof, and all goodwill associated with or symbolized by any of the foregoing (collectively, the “Trademark Collateral”).

WHEREAS, under the Patent Security Agreement and the Amended & Restated Patent Security Agreement, Variation Biotech granted to one or more Secured Parties a security interest in and continuing lien on Variation Biotech’s right, title and interest in, to and under the patent rights, including those set forth on Schedule B attached hereto, and all reissues, divisions, continuations, continuations-in-part, and all extensions and renewals, related to the foregoing (collectively, the “Patent Collateral”) (the Patent Collateral, together with the Trademark Collateral, the “Intellectual Property Collateral”).

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Secured Party hereby releases and terminates each IP Security Agreement and its security interest in and continuing lien on all of the right, title and interest in, to and under the Intellectual Property Collateral arising under each IP Security Agreement including those set forth on Schedule A and Schedule B attached hereto.

This Release shall be governed by and construed in accordance with the laws of the State of New York without regard to conflicts of law principles.

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IN WITNESS WHEREOF, each Secured Party has caused this Release to be duly executed by its authorized officer as of the day and year first written above.

PERCEPTIVE CREDIT HOLDINGS, LP
as Secured Party

By: S. Dixit

Name: Sandeep Dixit
Title: Chief Credit Officer

By: _____

Name: Sam Chawla
Title: Portfolio Manager

IN WITNESS WHEREOF, each Secured Party has caused this Release to be duly executed by its authorized officer as of the day and year first written above.

PERCEPTIVE CREDIT HOLDINGS, LP
as Secured Party

By: _____

Name: Sandeep Dixit
Title: Chief Credit Officer

By:  _____

Name: Sam Chawla
Title: Portfolio Manager

PCOF 1, LLC
as Secured Party

By: SD

Name: Sandeep Dixit
Title: Chief Credit Officer


By: _____

Name: Sam Chawla
Title: Portfolio Manager

PCOF 1, LLC
as Secured Party

By: _____

Name: Sandeep Dixit
Title: Chief Credit Officer

By:  _____

Name: Sam Chawla
Title: Portfolio Manager

SCHEDULE A

TRADEMARKS

**Schedules to Trademark Security Agreement**

Variation Owned Trademark Applications					
Trademark Family: Variosite™					Priority Date: August 11, 2010
Country	Number	Agent	Filing Date/ Registration Date (Dd/mm/yr)	Reference No.	Status
Canada	S.N. 1,491,977	BLG	11/08/2010 (Filing date)	TM 102449-1 CA	Pending
US	S.N. 76/440,352	BLG	11/02/2002 (Priority filing date) 09/08/2002 (Filing date)	TM 54051-2 US	Pending
Mexico	S.N. 1,027,921 (Class 5) R.N. 1120583	BLG	19/08/2009 (Filing date) 11/09/2009 (Registration Date)	TM 100380C5-21	Registered
Mexico	S.N. 1,027,927 (Class 42) R.N. 1120585	BLG	19/08/2009 (Filing date) 11/09/2009 (Registration Date)	TM 100380C42- 21	Registered
EU	S.N. 2,823,367 R.N. 2,823,367	BLG	09/08/2002 (Filing date) 12/03/2004 (Registration Date)	TM 54051-81	Registered



Trademark Family: Lipid Particle Vaccine™					Priority Date: May 20, 2011
Country	Number	Agent	Filing Date Dd/mm/yr	Reference No.	Status
Canada	S.N. 1,528,640	BLG	20/05/2011	TM 103841-1 CA	• Pending
Trademark Family: LPV™					Priority Date: May 20, 2011
Country	Number	Agent	Filing Date Dd/mm/yr	Reference No.	Status
Canada	S.N. 1,528,635	BLG	20/05/2011	TM 103842-1 CA	• Pending

SCHEDULE B

PATENTS

**Schedules to Patent Security Agreement**

VARIATION OWNED PEPTIDES PATENTS AND PATENT APPLICATIONS (Published)					
Inventors: José Vidal Torres			Assignee: Variation Biotechnologies Inc. Licensee: AMRIC/Lilly Creek Vaccines		
Patent Family: Immunogenic Formulations of Variable Peptidic Epitopes and Process for Preparation Thereof (Variosite Process Patent – Abstract - A process is disclosed for preparation of a immunogenic peptide mixture in a single synthesis. The peptide mixture collectively represents the <i>in vivo</i> variability seen in immunogenic epitopes from a pathogen. The mixture is termed a hypervariable epitope construct (HEC). Immunization with a HEC evokes broadly reactive immunity against divergent strains of a pathogen upon which the HEC is based.)			Priority Date: October 9, 1998. VBI-001-1 (US 60/103,642)		
Country	Number	Agent	Filing Date Dd/mm/yr	Reference No.	Status or Patent No.
United States	12/636,204 Continuation of	Choate (0028)	11/12/09	VBI-001USCN2	• abandoned
	11/425,610 Continuation of	BLG (568B)	21/06/06	VBI-001USCN	• abandoned
	10/072,084 CIP of	(568A)	08/02/02	VBI-001USCIP	• Issued; 7,118,874 Issue date 10/10/06; Earliest expected expiration date 08/02/22 • 11.5 year Renewal due 10/04/18
	09/414,484		08/10/99	VBI-001US	• abandoned
PCT	PCT/CA02/00137	BLG	08/02/02	VBI-001PC	• National Phase
	WO 03/066090 (publish 14/08/03)				• No priority claim to VBI-001-1



Canada	2,472,265	BLG	08/02/02	VBI-001CA	<ul style="list-style-type: none">• Issued; 2,472,265 Issue date 05/02/13; Earliest expected expiration date 08/02/22
Europe	02711695.3	BLG	08/02/02	VBI-001EP	<ul style="list-style-type: none">• Issued; 1476182 Issue date 09/11/11; Earliest expected expiration date 08/02/22• Validated in UK, France & Germany;
Japan	2003-565513	BLG	08/02/02	VBI-001JP	<ul style="list-style-type: none">• Issued; 4391827 Issue date 16/10/09; Earliest expected expiration date 08/02/22
Australia	2002231510	BLG	08/02/02	VBI-001AU	<ul style="list-style-type: none">• Issued; 2002231510 Issue date 17/07/08; Earliest expected expiration date 08/02/22
China	02828706.1	BLG	08/02/02	VBI-001CN	<ul style="list-style-type: none">• Issued; ZL02828706.1 Issue date 28/07/10; Earliest expected expiration date 08/02/22
India	1995/CHENP/2004	BLG	08/02/02	VBI-001IN	<ul style="list-style-type: none">• Issued; 243388 Issue date 12/10/10; Earliest expected expiration date 08/02/22
Mexico	PA/A/2004/007646	BLG	08/02/02	VBI-001MX	<ul style="list-style-type: none">• Issued; 263534 Issue date 07/01/09; Earliest expected expiration date 08/02/22
Eurasia	2004 00897	BLG	08/02/02	VBI-001EA	<ul style="list-style-type: none">• Issued; 008143 Issue date 27/04/07; Earliest expected expiration date 08/02/22
Russia	2004 00897	BLG	08/02/02	VBI-001RU	<ul style="list-style-type: none">• Issued; 008143 RU Issue date 27/04/07; Earliest expected expiration date 08/02/22



ARIPO	AP/P/2004/003081	BLG	08/02/02	VBI-001AR	<ul style="list-style-type: none"> • Issued; AP 2393 Issue date 30/04/12; Earliest expected expiration date 08/02/22
South Africa	2004/5492	BLG	08/02/02	VBI-001ZA	<ul style="list-style-type: none"> • Issued; 2004/5492 Issue date 28/09/05; Earliest expected expiration date 08/02/22
Korea		BLG	08/02/02	VBI-001KP	<ul style="list-style-type: none"> • Abandoned

Inventors: José Vidal Torres, David Evander Anderson and Franciso J. Diaz-Mitoma					Assignee: Variation Biotechnologies Inc. Licensee: AMRIC/Lilly Creek Vaccines
Patent Family: HIV Vaccine Composition (Abstract - An anti-HIV vaccine composition is disclosed. The vaccine comprises an combination of immunogenic peptide mixtures, which mixtures may be prepared in a single synthesis. The composition collectively represents the <i>in vivo</i> variability seen in immunogenic epitopes from highly variable regions of HIV. Immunization with the vaccine elicits broadly reactive immunity (CTL and T helper cell responses) against the divergent strains of HIV upon which it is based. The vaccine may be formulated to target regionally distinct variability based on an HIV clade predominant in a geographical region.)					Priority Date: March 1, 2005 VBI-002-1 (US 60/656,908)
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/CA06/000295 WO 06/092046 (publish 08/09/06)	BLG (2767)	28/02/06	VBI-002PC	<ul style="list-style-type: none"> • National Phase
Canada	2,540,279	BLG	28/02/06	VBI-002CA	<ul style="list-style-type: none"> • Issued; 2,540,279 Issue date 20/10/09; Earliest expected expiration date 28/02/26
United States	11/817,640	BLG	28/02/06	VBI-002US	<ul style="list-style-type: none"> • Issued; 8,029,797 Issue date 04/10/11; Earliest expected expiration date 28/02/26



Europe	06705249.8	BLG	28/02/06	VBI-002EP	<ul style="list-style-type: none"> • Issued; 1861121 Issue date 11/04/12; Earliest expected expiration date 28/02/26 • Validated in UK, France & Germany
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Inventors: José Vidal Torres					Assignee: Variation Biotechnologies Inc. Licensee: AMRIC/Lilly Creek Vaccines
Patent Family: Peptide-Based Influenza Vaccine Formulation (Abstract - Peptide-based anti-influenza formulations against influenza A and B are disclosed. The peptides are derived from influenza-based epitopes. The formulations are based on peptide mixtures which may be formulated so that variability is present at particular residues. The formulations can be used to prepare vaccines for preventing influenza in human, avian, murine or equine animals.)					Priority Date: June 1, 2005 VBI-003-1 (US 60/686,041)
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/CA06/000891 WO 06/128294 (publish 07/12/06)	BLG (2849)	01/06/06	VBI-003PC	• National Phase
Canada	2,610,667	BLG	01/06/06	VBI-003CA	• Abandoned
United States	11/921,436	BLG	01/06/06	VBI-003US	• Abandoned
Europe	06741591.9	BLG	01/06/06	VBI-003EP	• Abandoned
Japan	2008-513881	BLG	01/06/06	VBI-003JP	<ul style="list-style-type: none"> • Issued; 4939531 Issue date 02/03/12; Earliest expected expiration date 01/06/26
Mexico	MX/A/2007/015105	BLG	01/06/06	VBI-003MX	• Abandoned
India	9663/DELNP/2007	BLG	01/06/06	VBI-003IN	• Abandoned
Singapore	200718225-6	BLG	01/06/06	VBI-003SG	<ul style="list-style-type: none"> • Issued; 137978 Issue date 15/06/10; Earliest expected expiration date 01/06/26



China	200680023950.X	BLG	01/06/06	VBI-003CN	<ul style="list-style-type: none"> • Issued; ZL20068023950.X Issue date 05/10/11; Earliest expected expiration date 01/06/26
Hong Kong	08105712.8	BLG	01/06/06	VBI-003HK	<ul style="list-style-type: none"> • Abandoned
Korea	2007-7029582	BLG	01/06/06	VBI-003KR	<ul style="list-style-type: none"> • Abandoned

Inventors: Andrei Ogrel				Assignee: Variation Biotechnologies Inc. Licensee: AMRIC/Lilly Creek Vaccines	
Patent Family: Influenza Vaccine Formulation (Abstract – Peptide-based anti-influenza formulations against influenza are disclosed. The peptides derived from influenza-based epitopes. The formulations are based on peptide mixtures which may be formulated so that variability is present at particular residues. The formulations can be used to prepare vaccines for preventing influenza, particularly avian influenza.)				Priority Date: November 30, 2006 VBI-004-1 (US 60/868,008)	
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/CA07/002164 WO 08/064488 (publish 05/06/08)	BLG (3556)	30/11/07	VBI-004PC	<ul style="list-style-type: none"> • National Phase
United States	12/875,638 Divisional of 11/948,505	BLG/ Choate	03-09-10 30/11/07	VBI-004USDV VBI-004US	<ul style="list-style-type: none"> • Abandoned • Issued; 7,807,173 Issue date 05/10/10; Earliest expected expiration date 30/11/27
Canada	2, 670, 965	BLG	30/11/07	VBI-004CA	<ul style="list-style-type: none"> • Pending – 1st Office Action Response due 11/09/14



Europe	07855446.6	BLG	30/11/07	VBI-004EP	<ul style="list-style-type: none"> • Issued; 2097103 Issue date 03/10/12; Earliest expected expiration date 30/11/27 • Validated in UK, France, Germany & Switzerland
India	3777/CHENP/2009	BLG	30/11/07	VBI-004IN	<ul style="list-style-type: none"> • Pending –1st Office Action Response due 23/08/14
China	200780048923.2	BLG	30/11/07	VBI-004CN	<ul style="list-style-type: none"> • Issued; ZL200780048923.2 Issue date 22/08/12; Earliest expected expiration date 30/11/27
Japan	2009-538564	BLG	30/11/07	VBI-004JP	<ul style="list-style-type: none"> • Issued; 5177451 Issue date 18/01/13; Earliest expected expiration date 30/11/27

Inventors: Franciso J. Diaz-Mitoma, Andrei Ogrel, José Vidal Torres and David Evander Anderson					Assignee: Variation Biotechnologies Inc. Licensee: AMRIC/Lilly Creek Vaccines
Patent Family: Compositions and Methods for Treating Influenza (Abstract – The present application provides compositions and methods useful for treating influenza. As described herein, the compositions and methods are based on the development of peptides and peptide combinations which exhibit immunogenic properties against influenza. In some embodiments, the peptide combinations induce a protective response against multiple strains of influenza, e.g., seasonal strains of influenza or even the new pandemic influenza A (H1N1) virus of swine origin.)					Priority Date: June 19, 2008 VBI-005PC (PCT/US08/067471) Priority Date: May 29, 2009 VBI-008-1 (US 61/182,614)
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US09/047911 WO 09/155489 (publish 23/12/09)	Choate (0019)	19/06/09	VBI-008PC	<ul style="list-style-type: none"> • National Phase



Canada	2,735,724	Choate (0055) to BLG	28/02/11	VBI-008CA	• Pending – Examination requested 19/06/14
United States	14/161,842 Continuation of 12/999,725	Choate (0098) to BLG Choate (0052)	23/01/14 17/12/10	VBI-008USCN VBI-008US	• Pending • Abandoned
Japan	2011-514829	Choate (0060) to BLG	17/02/11	VBI-008JP	• Pending – 1 st Office Action Response filed 19/05/14
Australia	2009259964	Choate (0053) to BLG	17/01/11	VBI-008AU	• Pending – 1 st Office Action Response due 15/01/15
China	80132130.8	Choate (0056) to BLG	17/02/11	VBI-008CN	• Pending – 1 st & 2 nd Office Action Responses filed
India	348/CHENP/2011	Choate (0058) to BLG	17/01/11	VBI-008IN	• Pending
Israel	210097	Choate (0059) to BLG	19/01/11	VBI-008IL	• Pending – 1 st Office Action Response due 16/12/14
Korea	2011-7001217	Choate (0062) to BLG	17/01/11	VBI-008KR	• Pending – Examination requested 19/06/14

VARIATION OWNED HEPATITIS A PATENT APPLICATIONS (Published)					
Inventors: Franciso J. Diaz-Mitoma and Thanh Le				Owner: Variation Biotechnologies Inc.	
Patent Family: Compositions and Methods for Treating Hepatitis A (Abstract – The present application provides compositions and methods useful for treating hepatitis A. In particular, while hepatitis A vaccines are currently limited to parenteral administration routes (i.e., intramuscular injection), we have identified compositions that induce a protective response when administered orally.)				Priority Date: September 18, 2008 VBI-006-1 (US 60/098,177)	
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.



PCT	PCT/US09/057492 WO 10/033812 (publish 25/03/10)	Choate (0020)	18/09/09	VBI-006PC	• National Phase
United States	13/119,583	Choate (0072)	18/09/09	VBI-006US	• Abandoned
Inventors: Ali Aziz					Owner: Variation Biotechnologies Inc.
Patent Family: Method and Kit for Detection of Hepatitis A Virus Neutralizing Antibodies					Priority Date: April 15, 2009 VBI-007-1 (US 61/169,344)
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
Canada	2,700,078	BLG (6043)	15/04/10	VBI-007CA	• Abandoned
United States	12/760,858	BLG (6043)	15/04/10	VBI-007US	• Abandoned

VARIATION OWNED FORMULATION PROCESS PATENT APPLICATIONS (Published)					
Inventors: David Evander Anderson and Andrei Ogrel					Owner: Variation Biotechnologies Inc.
Patent Family: Methods for Preparing Liposomes and Formulation Produced Therefrom					Priority Date(s): July 6, Oct. 30 th , 2009 VBI-009-1/VBI-009-2 US 61/223,196 and US 61/256,912
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US10/041078 WO 11/005769 (publish 13/01/11)	Choate (0041)	06/07/10	VBI-009PC	• National Phase
Canada	2,767,392	BLG	06/07/10	VBI-009CA	• Pending – Examination to be requested 06/07/15
United States	13/377,365	Choate	06/07/10	VBI-009US	• Pending – 1 st Office Action Response due 06/09/14
Europe	10797727.4	BLG	06/07/10	VBI-009EP	• Pending – Response filed to Extended European Search Report



Japan	2012-519672	BLG	06/07/10	VBI-009JP	• Pending
China	201080039405.6	BLG	06/07/10	VBI-009CN	• Pending – 1 st & 2 nd Office Action Response filed
Australia	2010270722	BLG	06/07/10	VBI-009AU	• Pending
Brazil	112012 0008269	BLG	06/07/10	VBI-009BR	• Pending
Israel	217375	BLG	06/07/10	VBI-009IL	• Pending – Response filed to Examination Notice
India	1069/DELNP/2012	BLG	06/07/10	VBI-009IN	• Pending
Mexico	MX/A/2012/000372	BLG	06/07/10	VBI-009MX	• Pending – 1 st Office Action Response filed 24/06/14
Inventors: David Evander Anderson, Francisco Diaz-Mitoma and Thanh Le					Owner: Variation Biotechnologies Inc.
Patent Family: Methods for Preparing Liposomes and Formulation Produced Therefrom					Priority Date(s): July 6, Oct. 30 th , 2009 VBI-010-1/VBI-010-2 US 61/223,192 and US 61/256, 909
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US10/041081 WO 11/005772 (publish 13/01/11)	Choate (0043)	06/07/10	VBI-010PC	• National Phase
Canada	2,803,282	BLG	06/07/10	VBI-010CA	• Pending – Examination to be Requested 06/07/15
United States	13/377,371	Choate	06/07/10	VBI-010US	• Pending – 1 st Office Action Response filed 30/06/14

VARIATION OWNED ORAL FORMULATION PATENT APPLICATIONS (Unpublished)					
Inventors: David Evander Anderson					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Meningococcal and Pneumococcal Infections					Priority Date: December 23, 2009
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
US Provisional	61/289,603	Choate (0024)	23/12/09	VBI-011-1	• Not converted to PCT



Inventors: David Evander Anderson, Marc J. Kirchmeier, Tanvir Ahmed and Catalina P. Soare					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Enteric Diseases *Priority claim withdrawn prior to publication					Priority Date: December 23, 2009 VBI-012-1 US 61/289,615
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US10/061673	Choate (0045)	21/12/10	VBI-012PC	• PCT withdrawn prior to publication
Inventors: David Evander Anderson, Francisco Diaz-Mitoma, Thanh Le and Andrei Ogrel					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Influenza *Priority claim withdrawn prior to publication					Priority Date: December 23, 2009 VBI-013-1 US 61/289,580
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US10/61685	Choate (0047)	22/12/10	VBI-013PC	• PCT withdrawn prior to publication
Inventors: David Evander Anderson					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Measles, Mumps, and Rubella					Priority Date: December 23, 2009
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
US Provisional	61/289,586	Choate (0027)	23/12/09	VBI-014-1	• Not converted to PCT

VARIATION OWNED THERMOSTABLE FORMULATION PATENT APPLICATIONS (published)					
Inventors: David Evander Anderson					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Influenza					Priority Date: December 23, 2009 VBI-015-1 61/289,556
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US10/62079	Choate (0049)	23/12/10	VBI-015PC	• PCT withdrawn prior to publication
Inventors: David Evander Anderson, Jeff Baxter, Andrei Ogrel and Ron Boch					Owner: Variation Biotechnologies Inc.



Patent Family: Compositions and Methods for Treating Influenza					Priority Date(s): July 6, 2010 & Jan. 10, 2011 VBI-015-2/ VBI-015-4 US 61/361,898 and US 61/431,218
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US11/43094 WO 12/006367 (publish 12/01/12)	Choate (0073)	06/07/11	VBI-015PC1	• National Phase
Canada	2,840,079	BLG	06/07/11	VBI-015CA	• Pending – Examination to be Requested 06/07/16
United States	13/808,155	Choate	06/07/11	VBI-015US	• Pending – 1 st Office Action response filed
Europe	11804305.8	BLG	06/07/11	VBI-015EP	• Pending
Japan	2013-518810	BLG	06/07/11	VBI-015JP	• Pending – Examination Requested 05/07/14
China	201180042971.7	BLG	06/07/11	VBI-015CN	• Pending
Australia	2011276223	BLG	06/07/11	VBI-015AU	• Pending – 1 st Office Action Response due 14/01/15
Brazil	1120130003944	BLG	06/07/11	VBI-015BR	• Pending – Examination Requested 05/07/14
Israel	224022	BLG	06/07/11	VBI-015IL	• Pending
India	1077/DELNP/2013	BLG	06/07/11	VBI-015IN	• Pending – Examination Requested 05/07/14
Mexico	MX/A/2012/015232	BLG	06/07/11	VBI-015MX	• Pending
Inventors: David Evander Anderson, Jeff Baxter, Andrei Ogrel and Ron Boch					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Influenza					Priority Date(s): July 6, 2010 & Jan. 10, 2011 VBI-015-3/VBI-015-5 US 61/361,899 and US 61/431,278
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.



PCT	PCT/US11/43095 WO 12/006368 (publish 12/01/12)	Choate (0074)	06/07/11	VBI-015PC2	• Not converted at National Phase
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Inventors: David Evander Anderson					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Melanoma					Priority Date: December 23, 2009
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
US Provisional	61/289,560	Choate (0030)	23/12/09	VBI-016-1	• Not converted to PCT
Inventors: David Evander Anderson					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Hepatitis B					Priority Date: December 23, 2009
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
US Provisional	61/289,576	Choate (0031)	23/12/09	VBI-017-1	• Not converted to PCT
Inventors: Francisco Diaz-Mitoma, David Evander Anderson and Ali Aziz					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Method for Immunogenic Peptide Vaccines					Priority Date(s): Dec. 23, 2009 & Feb 5, 2010 VBI-018-1/VBI-018-2 US 61/289,588 and US 61/301,784
*Priority claim(s) withdrawn prior to publication					
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US11/061683	Choate (0051)	23/12/10	VBI-018PC	• PCT withdrawn prior to publication
Inventors: David Evander Anderson					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Hepatitis A					Priority Date: March 25, 2009
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
US Provisional	61/317,421	Choate (0035)	25/03/10	VBI-019-1	• Not converted to PCT
US Provisional	61/317,418	Choate (0034)	25/03/10	VBI-020-1	• Not converted to PCT



Inventors: Maura Ellen Campbell					Owner: Variation Biotechnologies Inc.
Patent Family: Synthetic Derivatives of MPL and Uses Thereof					Priority Date(s): November 18, 2011 VBI-021-1/VBI-022-1 61/561,795 and 61/561,797
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US12/65466 PCT/IB12/002855 WO 13/072768 (publish 23/05/13)	Choate (0087) BLG	18/11/12	VBI-022PC	<ul style="list-style-type: none"> • Pending • EP Application filed • US Application filed • Assignment filed
Inventors: David Evander Anderson, Tanvir Ahmed, Jasminka Bozic and Marc Kirchmeier					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Viral Infections					Priority Date: January 13, 2011 VBI-023-1 61/432,567
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US12/21388 WO 12/097346 (Publish 19/07/12)	Choate (0080)	13/01/12	VBI-023PC	<ul style="list-style-type: none"> • National Phase
Canada	NA	BLG	13/01/12	VBI-023CA	<ul style="list-style-type: none"> • Reinstate NPE late entry 13/07/14
United States	13/979,322	BLG	13/01/12	VBI-023US	<ul style="list-style-type: none"> • Pending – Preliminary Amendment filed
Europe	12734104.8	BLG	13/01/12	VBI-023EP	<ul style="list-style-type: none"> • Pending – Claim Amendments filed
China	201280008709.5	BLG	13/01/12	VBI-023CN	<ul style="list-style-type: none"> • Pending
Brazil	1120130179392	BLG	13/01/12	VBI-023BR	<ul style="list-style-type: none"> • Pending – Examination to be Requested 12/01/15
India	7052/DELNP/2013	BLG	13/01/12	VBI-023IN	<ul style="list-style-type: none"> • Pending – Examination to be Requested 12/01/15
Mexico	MX/A/2013/008106	BLG	13/01/12	VBI-023MX	<ul style="list-style-type: none"> • Pending



Inventors: David Evander Anderson, Yvonne Perrie, Jit Wilkhu and Marc Kirchmeier					Owner: Variation Biotechnologies Inc.
Patent Family: Methods for Preparing Vesicles and Formulations Produced Therefrom					Priority Date: January 13, 2011 VBI-024-1 61/432,569
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US12/21389 WO 12/097347 (Publish 19/07/12)	Choate (0081)	13/01/12	VBI-024PC	<ul style="list-style-type: none"> • National Phase
Canada	NA	BLG	13/01/12	VBI-024CA	<ul style="list-style-type: none"> • Reinstate NPE late entry 13/07/14
United States	13/979,317	BLG	13/01/12	VBI-024US	<ul style="list-style-type: none"> • Pending – Preliminary Amendment filed
Europe	12733900.0	BLG	13/01/12	VBI-024EP	<ul style="list-style-type: none"> • Pending – Claim Amendments filed
China	201280008692.3	BLG	13/01/12	VBI-024CN	<ul style="list-style-type: none"> • Pending
Australia	2012205315	BLG	13/01/12	VBI-024AU	<ul style="list-style-type: none"> • Pending – Examination to be Requested 12/01/17
Brazil	1120130180749	BLG	13/01/12	VBI-024BR	<ul style="list-style-type: none"> • Pending – Examination to be Requested 12/01/15
India	7053/DELNP/2013	BLG	13/01/12	VBI-024IN	<ul style="list-style-type: none"> • Pending – Examination to be Requested 12/01/15
Mexico	MX/A/2013/008104	BLG	13/01/12	VBI-024MX	<ul style="list-style-type: none"> • Pending
Inventors: David Evander Anderson and Anne-Catherine Fluckiger					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treatment of Cytomegalovirus					Priority Date(s): Nov 11, 2011 and July 1, 2012 VBI-025-1/ VBI-025-2 61/558,800 and 61/654,157
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US12/64556 PCT/IB12/002854 WO 13/068847 (publish 16/05/13)	Choate (0086) BLG	09/11/12	VBI-025PC	<ul style="list-style-type: none"> • Pending – NPE (31 months) & late entries • 30 month NPE Applications filed 10/05/14 • Assignment filed



Inventors: David Evander Anderson					Owner: Variation Biotechnologies Inc.
Patent Family: Compositions and Methods for Treating Viral Infections					Priority Date: January 12, 2012 VBI-026-1 61/585,971
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US13/21277 PCT/IB13/000453 WO 13/104995 (publish 18/07/13)	Choate (0091) BLG	12/01/13	VBI-026PC	<ul style="list-style-type: none"> • Pending – NPE (30 months) due 11/07/14 • Assignment filed
Inventors: Marc Kirchmeier					Owner: Variation Biotechnologies Inc.
Patent Family: Methods and Compositions for Therapeutic Agents					Priority Date: January 27, 2012 VBI-027-1 61/591,837
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US13/23079 PCT/IB13/000454 WO 13/111012 (publish 01/08/13)	Choate (0092) BLG	25/01/13	VBI-027PC	<ul style="list-style-type: none"> • Pending – NPE (30 months) due 26/07/14 • Assignment filed
Inventors: David Evander Anderson, Jasminka Bozic and Barthelemy Ontsouka					Owner: Variation Biotechnologies Inc.
Patent Family: Methods for Detection of Anti-Cytomegalovirus Neutralizing Antibodies					Priority Date: January 27, 2012 VBI-028-1 61/616,204
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US13/34157 PCT/IB13/001021 WO 13/144722 (publish 03/10/13)	Choate (0093) BLG	27/03/13	VBI-028PC	<ul style="list-style-type: none"> • Pending –NPE (30 months) due 26/09/14 • Assignment filed
Inventors: David Evander Anderson, and David Klatzmann					Owner: Variation Biotechnologies Inc.



Patent Family: Compositions and Methods for Inducing a CTL Response					Priority Date(s): February 25, 2013 and March 21, 2013 VBI-029-1/ VBI-029-2 61/769,140 and 61/803,940
Country	Number	Agent	Filing Date	Reference No.	Status or Patent No.
PCT	PCT/US14/18277 PCT/IB14/000815	Choate (0099) BLG	25/02/14	VBI-029PC	<ul style="list-style-type: none">• Pending• Assignment to be filed



Inventors: David Klatzmann and Jean-Loup Salzmann					Assignee: Universite Pierre et Marie Curies (Paris VI) Licensee: Variation Biotechnologies Inc.
Patent Family: Defective Viral Vaccine Particles Obtained in Vivo or Ex Vivo (Particules Virales Defectives Vaccinales Obtenues in Vivo ou ex Vivo) Filed in French (Abstract – The present invention relates to a vaccine consisting of defective viral particles as are obtained in vivo or ex vivo, in individuals infected or capable of being infected with a virus, after expression of the genes carried by a vector or a combination of vectors and comprising at least the structural genes necessary for the constitution of the viral particle.)					Priority Date: April 5, 1996 (FR 96/04370)
Country	Number	Agent	Filing Date Dd/mm/yr	Reference No.	Status or Patent No.
PCT	PCT/FR97/00619 WO 97/38118 (published 16/10/97)	Becker B0014	07/04/97	P1-PC	• National Phase
United States	09/166,147	Becker	07/04/97	P1-US	• Issued; 6,140,114 Issue date 31/10/00; Earliest expected expiration date 07/04/17
Europe	EP 97 400796.5	Becker	07/04/97	P1-EP	• Issued; EP0799893B2 Issue date 12/09/01; Earliest expected expiration date 07/04/17 • Validated in France, Germany, Great Britain, Spain & Italy
Canada	2,251,027	Becker	07/04/97	P1-CA	• Issued; 2,251,027 Issue date 10/11/09; Earliest expected expiration date 07/04/17
Japan	JP 1997-535922	Becker	07/04/97	P1-JP	• Abandoned



Inventors: David Klatzmann, Jean-Loup Salzmann, Bertrand Bellier, Charlotte Frisen and Francoise-Loic Cosset					Assignee: Universite Pierre et Marie Curies (Paris VI) Licensee: Variation Biotechnologies Inc.
Patent Family: Synthetic Viruses and Uses Thereof (Abstract – The present invention relates to compositions and methods for producing an immune response or reaction, as well as to vaccines, kits, processes, cells and uses thereof. This invention more particularly relates to compositions and methods of using a synthetic viral particle to produce, modify or regulate an immune response in a subject. In a more preferred embodiment, the invention is based, generally, on compositions using synthetic viral particles as an adjuvant and/or vehicle to raise immune response against selected antigen(s) or epitopes, in particular a cellular and/or a humoral immune response.					Priority Date: October 26, 2000 (EP 00 402978.1)
Country	Number	Agent	Filing Date Dd/mm/yr	Reference No.	Status or Patent No.
PCT	PCT/EP01/12356 WO 02/34893 (published 02/05/02)	Becker B0047	25/10/01	P2-PC	• National Phase
United States	14/163,315 Continuation of 10/415,242	Choate Becker	24/01/14 25/10/01	P2-US2 P2-US1	• Pending • Issued; 8,673,612 Issue date 18/03/14; Earliest expected expiration date 25/10/21
Europe	10 183343.2 Divisional of 01 988766.0	Becker	30/09/10 25/10/01	P2-EP2 P2-EP1	• Pending – 1 st & 2 nd Office Action responses filed • Notice to Grant; 15/10/13; Earliest expected expiration date 25/10/21



Inventors: Birke Bartosch and Francois-Loic Cosset					Assignee: Institut National de la Sante et de la Recherche Medicale (INSERM) Licensee: Variation Biotechnologies Inc.
Patent Family: Infectious Hepacivirus Pseudo-Particles Containing Functional E1, E2 Envelope Proteins					Priority Date(s): Sept 13, 2002 & March 3, 2003 (EP 02292254.6) & (EP 03290505.1)
Country	Number	Agent	Filing Date Dd/mm/yr	Reference No.	Status or Patent No.
PCT	PCT/IB03/003882 WO 04/024904 (published 25/03/04)	Lavoix	12/09/03	P3-PC	• National Phase
United States	10/527,422	Lavoix	12/09/03	P3-US	• Pending – Response filed to RCE
Europe	03 795150.6	Lavoix	12/09/03	P3-EP	• Issued; EP 1 537 206 B1 Issue date 06/05/09; Earliest expected expiration date 12/09/23 • Validated in France, Germany, Spain, Greece, Italy, Great Britain and Turkey
Canada	2,498,770	Lavoix	12/09/03	P3-CA	• Pending – 3 rd Office Action response filed
Japan	JP 2004-571924	Lavoix	12/09/03	P3-JP	• Issued; 4634152 Issue date 26/11/10; Earliest expected expiration date 12/09/23