

PATENT ASSIGNMENT

Electronic Version v1.1
Stylesheet Version v1.1

SUBMISSION TYPE:

NEW ASSIGNMENT

NATURE OF CONVEYANCE:

SECURITY AGREEMENT

CONVEYING PARTY DATA

Name	Execution Date
Vital Therapies, Inc.	11/30/2009

RECEIVING PARTY DATA

Name:	Equity Trust Company dba Sterling Trust Custodian FBO John Lewis
Street Address:	7901 Fish Pond Road
City:	Waco
State/Country:	TEXAS
Postal Code:	76710

Name:	DFJ DragonFund China, L.P.
Street Address:	2882 Sand Hill Road, Suite 150
City:	Menlo Park
State/Country:	CALIFORNIA
Postal Code:	94025

Name:	DFJ DragonFund Partners, LLC
Street Address:	2882 Sand Hill Road, Suite 150
City:	Menlo Park
State/Country:	CALIFORNIA
Postal Code:	94025

Name:	Draper Fisher Jurvetson Fund VIII, L.P.
Street Address:	2882 Sand Hill Road, Suite 150
City:	Menlo Park
State/Country:	CALIFORNIA
Postal Code:	94025

Name:	Draper Fisher Jurvetson Partners VIII, LLC
Street Address:	2882 Sand Hill Road, Suite 150

501050954

PATENT
REEL: 023699 FRAME: 0704

CH \$160.00 5290684

City:	Menlo Park
State/Country:	CALIFORNIA
Postal Code:	94025

Name:	JABE, LLC
Street Address:	2882 Sand Hill Road, Suite 150
City:	Menlo Park
State/Country:	CALIFORNIA
Postal Code:	94025

Name:	Toucan Capital Fund II, L.P.
Street Address:	7600 Wisconsin Avenue
Internal Address:	7th Floor
City:	Bethesda
State/Country:	MARYLAND
Postal Code:	20814

PROPERTY NUMBERS Total: 4

Property Type	Number
Patent Number:	5290684
Patent Number:	5368555
Patent Number:	7390651
Application Number:	11064566

CORRESPONDENCE DATA

Fax Number: (303)629-7610
Correspondence will be sent via US Mail when the fax attempt is unsuccessful.
 Phone: 303.825.0800
 Email: kkalan@bw-legal.com
 Correspondent Name: K Kalan
 Address Line 1: 370 17th Street, Suite 4800
 Address Line 2: Berenbaum Weinshienk PC
 Address Line 4: Denver, COLORADO 80202

ATTORNEY DOCKET NUMBER:	12510.850
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NAME OF SUBMITTER:	K Kalan
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Total Attachments: 28

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PATENT
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SECURITY AGREEMENT

THIS SECURITY AGREEMENT (the "Security Agreement") is executed on September 25, 2009 (the "Effective Date"), by and on behalf of **Vital Therapies, Inc.**, a Delaware corporation (together with its successors and assigns, the "Debtor"), whose address is 15222 B Avenue of Science, San Diego, California 92128, in favor of each of the holders listed on Schedule A attached hereto (collectively, "Lenders") and Ross Jaffe, M.D., in his capacity as Lender Representative (as defined below, and together with the Lenders, the "Secured Party"), on behalf of the Lenders.

In consideration of the mutual promises contained herein, Debtor agrees with Secured Party as follows:

1. Grant of Security Interest. Debtor hereby grants Secured Party a security interest in the property described on Exhibit A attached hereto ("Collateral").

2. Obligations Secured. The obligations secured ("Obligations") hereby shall be as follows:

(a) Debtor's prompt payment and performance of all of its obligations under the Convertible Notes of Debtor dated the date hereof ("Original Notes") in the principal amounts and payable to the holders shown on Schedule A;

(b) Debtor's prompt payment and performance of all of its Obligations under Convertible Promissory Notes ("Additional Notes") of Debtor that may be issued after the date hereof, pursuant to the terms of the Convertible Note and Warrant Purchase Agreement, dated as of the Effective Date, under which the Original Notes were issued (the "Purchase Agreement"), which Additional Notes will be listed in a supplement to this Security Agreement (the Original Notes and the Additional Notes to be collectively referred to as the "Notes");

(c) Debtor's prompt payment and performance of all of its Obligations under this Security Agreement; and

(d) Any extensions, renewals, or modifications of any of the foregoing, and all loans, advances, debts, liabilities and obligations owed by the Company to the Lenders hereafter arising under or pursuant to the terms of the Purchase Agreement, the Notes or this Security Agreement.

3. Covenants and Warranties of Debtor. Debtor warrants, covenants and agrees that:

(a) The Company is incorporated in the State of Delaware, and its exact legal name and the location of its chief executive office are set forth in the first paragraph of this Security Agreement.

(b) The Collateral is used and will be used for Debtor's business.

(c) Except for any permitted liens ("Permitted Liens") that may be listed on Exhibit A, Debtor is and will continue to be the owner of the Collateral (or, in the case of after-acquired Collateral, at the time the Company acquires rights in the Collateral, will be the owner thereof) free from any prior lien or security interest and Debtor will defend the Collateral against all claims and demands of all persons at any time claiming the same or any right, title, claim or interest (by way of lien or otherwise) therein.

(d) Upon the filing of a UCC-1 Financing Statement in the appropriate filing office in Delaware, the Secured Party has (or in the case of after-acquired Collateral, at the time the Company acquires rights therein, will have) a first priority perfected security interest in the Collateral to the extent a security interest in the Collateral can be perfected by such filing, except for Permitted Liens. Except for the Permitted Liens, no financing statement, Security Agreement, pledge or assignment covering any of the Collateral or any proceeds thereof exists and none is on file in any public office, nor will Debtor execute any Financing Statement, security agreement or assignment affecting the Collateral without the prior written consent of Secured Party.

(e) Debtor will pay and perform the Obligations in accordance with their terms.

(f) Debtor will execute one or more Financing Statements pursuant to the Uniform Commercial Code (and any extensions or modifications thereof) and any assignments in form satisfactory to Secured Party, and Debtor hereby appoints the Lender Representative its attorney-in-fact to execute any financing statements and continuation statements, and to do, at Secured Party's option and at Debtor's expense, all acts and things which Lender Representative may deem necessary to perfect and continue perfected the security interest created by this Security Agreement.

(g) Debtor will pay all costs of filing any financing, continuation, assignment, or termination statements with respect to the security interest created by this Security Agreement.

(h) Except for sales of inventory occurring in the ordinary course of business, Debtor will not sell, offer to sell, or otherwise transfer the Collateral or any of Debtor's rights therein or permit any lien, encumbrance, or security interest to attach to the Collateral except that created by this Security Agreement and the Permitted Liens. Debtor will perform its obligations under the security agreements for the Permitted Liens and under any other security agreements granted with Secured Party's written consent.

(i) Debtor will use the Collateral in connection with its business ("Business") conducted at its address stated above ("Premises") and will not use the Collateral for any other purpose. Debtor will keep the Business open and operating on the Premises on a continuous basis from and after the Effective Date and will not sell or transfer any interest in the Business.

(j) Debtor will pay as they become due all taxes or other liens or claims which may become a charge against the Collateral.

(k) Debtor will insure the Collateral with companies and in amounts acceptable to Secured Party, such amounts being the full replacement value of the Collateral or the maximum amount the insurer will permit, against risks of theft, vandalism, fire and such other risks as are normally insured against, including standard extended coverage. All insurance policies shall be written for the benefit of Debtor and Secured Party as their interests may appear, and policies or certificates evidencing the same shall be furnished to Secured Party. All insurance policies shall provide for at least ten days' prior written notice of cancellation to Secured Party. If Debtor is insuring the Collateral for the benefit of the holder of a Permitted Lien and such insurance satisfies the coverage and amount of coverage requirements of this Section, such insurance will satisfy this Section if Secured Party is also listed as an insured and the policy provides for at least ten days' prior written notice of cancellation to Secured Party

(l) Debtor will maintain the Collateral in good condition and repair and will permit Secured Party to examine and inspect the Collateral at any reasonable time and wherever located.

(m) Debtor will not permit any of the Collateral to be removed from Debtor's place of business without the prior written consent of Secured Party which will not be unreasonably withheld. Debtor will give immediate notice to Secured Party of any change of name of Debtor, whether resulting from merger, consolidation, filing of trade name affidavit, or otherwise.

(n) Debtor will indemnify and save Secured Party harmless from and against any and all loss, damage, liability, injury or other casualty to persons or property caused or occasioned by the maintenance, operation and use of the Collateral by Debtor, its agents or employees.

(o) Debtor will supply Secured Party with a current inventory of the Collateral at periodic intervals at the request of Secured Party.

(p) With respect to Collateral purchased or to be purchased with credit or monies advanced by Secured Party to Debtor, this Security Agreement constitutes a purchase money security interest.

(q) If any of the Collateral consists of Debtor's rights under contracts, Debtor agrees that it will keep such contracts in full force and effect, will perform all of its obligations thereunder on or before the same become due and that it will not terminate, modify or amend any of the terms of such contracts without the consent of Secured Party.

(r) If any of the Collateral consists of inventions, processes, systems, techniques, instructions, procedures, lists of customers, prospective customers, suppliers or prospective suppliers, trade secrets, or any other intellectual property (collectively referred to as "Trade Secrets") then Debtor will not disclose any of the Trade Secrets to any person whatsoever except in the ordinary course of Debtor's business, Debtor will cause its employees or other agents who have access to the Trade Secrets to maintain such confidentiality and Debtor will otherwise use its best efforts to maintain and preserve the proprietary nature of the Trade Secrets.

4. Discharge of Encumbrances. At its option, Secured Party may discharge taxes, liens, security interests or other encumbrances at any time levied or placed on the Collateral (except that it may only discharge a Permitted Lien if such lien is in default), may pay for costs of maintenance or preservation of the Collateral, and may pay any other charges or expenses or perform any obligation imposed upon Debtor hereunder. Debtor agrees to reimburse Secured Party on demand for any payment made, together with interest at the highest rate of interest ("Default Rate") that would apply under any of the Obligations if there had been a default thereunder and/or an acceleration thereof, and any expense incurred by Secured Party, pursuant to the foregoing authorization including attorneys' fees.

5. Possession of Collateral. Until the occurrence of an Event of Default, Debtor may have possession of the Collateral and use it in any lawful manner not inconsistent with this Security Agreement and not inconsistent with any policy of insurance thereon, but upon the occurrence of an Event of Default, Lender Representative, acting on behalf of Secured Party, shall have the immediate right to possession and use of the Collateral and to cause Debtor or any other person to terminate its possession and use of the Collateral.

6. Appointment of Lender Representative.

(a) Appointment by Lenders. The Lenders hereby appoint Ross Jaffe, M.D. as Lender Representative for the Secured Party under this Security Agreement to serve from the Effective Date until the termination of this Security Agreement. Notwithstanding anything to the contrary in this Security Agreement, the Lender Representative may be removed or replaced with the written consent of the Majority Lenders (as defined in Section 19 hereof).

(b) Powers and Duties of Lender Representative; Indemnity by Lenders.

(i) Each Lender hereby irrevocably authorizes the Lender Representative to take such action and to exercise such powers hereunder as provided herein or as requested in writing by the Majority Lenders in accordance with the terms hereof, together with such powers as are reasonably incidental thereto. The Lender Representative may execute any of his or her duties hereunder by or through agents or employees and shall be entitled to request and act in reliance upon the advice of counsel concerning all matters pertaining to his or her duties hereunder and shall not be liable for any action taken or omitted to be taken by him or her in good faith in accordance therewith.

(ii) The Lender Representative shall not be liable or responsible to any Lender or to the Company for any action taken or omitted to be taken by the Lender Representative or any other such person hereunder or under any related security agreement, instrument or document, except in the case of gross negligence or willful misconduct on the part of the Lender Representative, nor shall the Lender Representative be liable or responsible for (A) the validity, effectiveness, sufficiency, enforceability or enforcement of the Notes, this Security Agreement or any instrument or document delivered hereunder or relating hereto; (B) the Company's title to any of the Collateral or the freedom of any of the Collateral from any prior or other liens or security interests; (C) the determination, verification or enforcement of the Company's compliance with any

of the terms and conditions of this Security Agreement; (D) the failure by the Company to deliver any instrument or document required to be delivered pursuant to the terms hereof; or (E) the receipt, disbursement, waiver, extension or other handling of payments or proceeds made or received with respect to the Collateral, the servicing of the Collateral or the enforcement or the collection of any amounts owing with respect to the Collateral.

(iii) In the case of this Security Agreement and the transactions contemplated hereby and any related document relating to any of the Collateral, each of the Lenders agrees to pay to the Lender Representative, on demand, his, her or its pro rata share of all fees and all expenses incurred in connection with the operation and enforcement of this Security Agreement, the Notes or any related security agreement to the extent that such fees or expenses have not been paid by the Company. In the case of this Security Agreement and each instrument and document relating to any of the Collateral, each of the Lenders and the Company hereby agrees to hold the Lender Representative harmless, and to indemnify the Lender Representative from and against any and all loss, damage, expense or liability that may be incurred by the Lender Representative under this Security Agreement and the transactions contemplated hereby and any related Security Agreement or other instrument or document, as the case may be, unless such liability shall be caused by the willful misconduct or gross negligence of the Lender Representative.

7. Events of Default. The occurrence of any one or more of the following events ("Event of Default") shall constitute a default for the purposes of this Security Agreement:

(a) Debtor's failure to promptly pay or perform under any of the Notes or any other of the Obligations or a default or event of default occurs under any of the Notes and/or the Obligations and such failure or default is not cured within any applicable cure period;

(b) Debtor's use of the Collateral in violation of any statute or ordinance;

(c) Debtor's breach of any material term, condition, representation, or covenant to be performed or observed by Debtor provided in this Security Agreement and the continuance of such breach for 30 days after notice to Debtor; or

(d) If any warranty, representation or statement made or furnished to Secured Party by or on behalf of Debtor in connection with this Security Agreement or the Notes proves to have been false or misleading in any material respect when made or furnished.

8. Secured Party Remedies. Upon the occurrence of an Event of Default at the option of the Lender Representative, acting on behalf of the Secured Party, and without notice, all of the Obligations shall be and become immediately due and payable and Lender Representative, acting on behalf of Secured Party, shall then have the rights, options and remedies of a secured party under the Uniform Commercial Code including, without limitation, the right of Lender Representative to take possession of the Collateral and the right for that purpose without legal process to enter any premises where the Collateral may be found, provided such entry shall be done lawfully. Debtor further agrees to assemble the Collateral and make it available to the Lender Representative upon request at the place designated by Lender Representative which is reasonably convenient to both parties. In the event Lender Representative, acting on behalf of the Secured Party, brings court action to obtain possession of the Collateral, he shall be entitled to an order for

possession prior to a hearing, and Debtor hereby waives its right to a hearing prior to losing possession of the Collateral by means of court order. Any requirement of said Code of reasonable notification of the time and place of any public sale, or of the time after which any private sale or other disposition is to be made shall be satisfied by mailing such notice to the Debtor at the address shown at the beginning of this Security Agreement at least seven days prior to the time and place of any public sale or the time after which any private sale or any other intended disposition is to be made. Debtor shall be and remain liable for any deficiency remaining after applying the proceeds of disposition of the Collateral first to expenses incurred by Lender Representative in connection therewith, and then to the satisfaction of the Obligations secured hereby. Expenses of retaking, holding, preparing for sale, selling or the like shall include Lender Representative's reasonable attorneys' fees and legal expenses together with interest thereon at the Default Rate. Upon the occurrence of an Event of Default, Lender Representative shall also be entitled to a receiver for Debtor, the Collateral and/or the Business as a matter of right without regard to the solvency or insolvency of the Debtor and without regard to the value of the Collateral. Such receiver may be appointed by any court of competent jurisdiction upon ex parte application without notice, and Debtor hereby waives all rights to such notice or hearing.

9. Company's Appointment of Lender Representative as Attorney-in-Fact. The Company hereby irrevocably appoints the Lender Representative as its attorney-in-fact (which appointment is coupled with an interest) and agrees that the Lender Representative may perform (but the Lender Representative shall not be obligated to and shall incur no liability to the Company or any third party for failure so to do) any act that the Company is obligated by this Security Agreement to perform, and to exercise such rights and powers as the Company might exercise with respect to the Collateral, including the right to:

(i) collect by legal proceedings or otherwise and endorse, receive and receipt for all dividends, interest, payments, proceeds and other sums and property now or hereafter payable on or on account of the Collateral;

(ii) enter into any extension, reorganization, deposit, merger, consolidation or other agreement pertaining to, or deposit, surrender, accept, hold or apply other property in exchange for the Collateral;

(iii) make any compromise or settlement, and take any action it deems advisable, with respect to the Collateral;

(iv) insure, process and preserve the Collateral;

(v) pay any indebtedness of the Company relating to the Collateral; and

(vi) file a UCC financing statement and execute other documents, instruments and agreements required hereunder;

provided, however, that the Lender Representative shall not exercise any such powers granted pursuant to subsections (i) through (vi) prior to the occurrence of an Event of Default (as defined in Section 7 above) and shall only exercise such powers during the continuance of such Event of Default. The Company agrees to reimburse the Lender Representative upon demand for any reasonable costs and expenses, including reasonable attorneys' fees and expenses, the Lender

Representative may incur while acting as the Company's attorney-in-fact hereunder, all of which costs and expenses are included in the Obligations. It is further agreed and understood between the parties hereto that such care as the Lender Representative gives to the safekeeping of his or her own property of like kind shall constitute reasonable care of the Collateral when in the Lender Representative's possession; provided, however, that the Lender Representative shall not be required to make any presentment, demand or protest, or give any notice and need not take any action to preserve any rights against any prior party or any other person in connection with the Obligations or with respect to the Collateral.

10. Rights Relating to Trade Secrets. After the occurrence of an Event of Default, the Lender Representative, acting on behalf of Secured Party, shall have the immediate right to the use and possession of any Trade Secrets included in the Collateral. Upon written notice to Debtor delivered at any time after the occurrence of an Event of Default, Debtor agrees to prepare, assemble and deliver to Lender Representative descriptions of all its Trade Secrets and instructions on use of such Trade Secrets in connection with its products. Such instructions shall be sufficiently detailed and informative so as to enable a reasonably skilled engineer to use the Trade Secrets. After the occurrence of an Event of Default, Lender Representative (or any purchaser of the Trade Secrets at a sale of the Collateral) shall have all rights with respect to the Trade Secrets and shall not have any obligation to pay royalties or any other payments with respect to the Trade Secrets. Upon notice from Lender Representative after the occurrence of an Event of Default, all Debtor's rights to the Trade Secrets will terminate and Debtor agrees to maintain the confidentiality of the Trade Secrets and to cease all use of the Trade Secrets.

11. Resort to Other Security. The taking of this Security Agreement shall not waive or impair any other security Secured Party may have or hereafter acquire for the payment and performance of the Obligations, nor shall the taking of any such additional security waive or impair this Security Agreement; but Secured Party may resort to any security it may have in the order it may determine in its sole discretion.

12. Waiver of Rights. The failure of Lender Representative or Secured Party to exercise any right he, she or it may have hereunder shall not be deemed a waiver thereof unless so agreed in writing by Lender Representative or Secured Party, as appropriate, and the waiver by Secured Party of any default of Debtor hereunder shall not constitute a continuing waiver or a waiver of any other default or of the same default on a future occasion.

13. Binding Effect. The rights and obligations of Secured Party and Debtor shall inure to the benefit of and bind their respective successors and assigns.

14. Severability. If any provisions of this Security Agreement shall for any reason be held to be invalid or unenforceable, such invalidity or unenforceability shall not affect any other provision hereof, but this Security Agreement shall be construed as if such invalid or unenforceable provision had never been contained herein.

15. Termination. This Security Agreement shall terminate when the Notes and all of the other Obligations are paid and satisfied in full. Upon termination of this Security Agreement, Secured Party shall upon Debtor's request execute and deliver to Debtor a Termination Statement for any Financing Statements filed hereunder and shall deliver to Debtor any portions of

the Collateral that are in the possession of Secured Party unless Secured Party has acquired rights to such Collateral pursuant to this Security Agreement.

16. Liability for Deficiency. Debtor shall be liable for any deficiency remaining after sale of Collateral and/or the exercise of any other remedy by Secured Party hereunder, provided that nothing contained herein shall require Secured Party to pursue any of its remedies against the Collateral before enforcing or obtaining a judgment under any of the Notes or other Obligations.

17. Notices. Any notice or other communication required or permitted hereunder shall be in writing and shall be considered given upon personal delivery to the party being notified or if such party is a corporation, to an executive officer of such corporation, or on the third business day after the same is mailed by registered or certified mail (return receipt requested) or on the first business day after the same is sent by a nationally recognized overnight delivery service that provides evidence of delivery and, in the case of mailing or overnight delivery service, addressed to the party being notified at its address set forth above (or such other address as a party may specify by notice pursuant to this paragraph).

18. Assignment. Secured Party may assign this Security Agreement in whole or in part in connection with a complete or partial assignment or transfer of any of the Notes or other Obligations and in the event of such assignment, the assignee shall be entitled, upon notifying Debtor, to performance of the Debtor's obligations and agreements hereunder, and the assignee shall be entitled to the assigned rights and remedies of the Secured Party hereunder.

19. No Action on Default. The holders of the Notes agree that they will not pursue any right or remedy as a result of a default or Event of Default under the Notes or under this Security Agreement without the consent of holders who hold Notes representing more than 50% of the aggregate principal amount of all of the Notes ("Majority Lenders"). If the Majority Lenders determine to take any action or pursue any right or remedy, they may do so on behalf of the holders of all Notes, and each holder hereby irrevocably appoints the Majority Lenders as its agent and attorney-in fact for such purpose. In the event of any realization on the security under this Security Agreement after payment of all cost and expenses incurred in connection therewith (together with interest at the rate of 12% per annum) to those holders of Notes advancing such costs and expenses, the proceeds from such realization shall be distributed pro rata to the holders of the Notes in the same manner as the Secured Party is required to make pro rata payments pursuant to the terms of the Notes.

20. Amendments and Waivers. Any term of this Security Agreement may be amended or waived only with the written consent of the Secured Party and the Majority Lenders; provided, however, that no such waiver, amendment, or modification shall reduce the percentage in interest of the Notes the holders of which are required to consent to any waiver, amendment, or modification; provided further that, in the event that such waiver, amendment, or modification adversely affects the rights and obligations of a holder of a Note in a different manner than any of the other holders, such waiver, amendment, or modification shall also require the written consent of such differently affected holder. Notwithstanding the foregoing, this Security Agreement may be modified to add holders of Additional Notes to Schedule A, with the consent of the Secured Party, but without the consent of the holder of any other Note; provided that such Additional Notes are

issued pursuant to the terms of the Purchase Agreement. Any amendment or waiver affected in accordance with this Section 18 shall be binding upon the holders and transferees of all of the Notes.

21. Governing Law. This Security Agreement shall be governed by the internal law of the State of Delaware.

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EXECUTED as of the date set forth above.

DEBTOR:

Vital Therapies, Inc., a Delaware corporation

By: _____

Name: _____

Title: _____

Aron Stern
ARON STERN
SECRETARY

EXHIBIT A
TO
SECURITY AGREEMENT

Dated: September 25, 2009

Description of Collateral:

Those general intangibles, now owned or hereafter acquired by Debtor, that include any and all intellectual property and software, and any and all inventions, processes, systems, techniques, procedures, and trade secrets used by Debtor in its business or in its products. The Collateral also includes, without limitation, all of the following and all rights (as licensee or as licensor) under licenses relating thereto:

(i) All technology, methods, inventions, improvements, discoveries, concepts, and ideas (whether or not patentable) in any technological area, including without limitation, trade secrets, processes, products, systems, formulas, apparatus, techniques, know-how, instructions, procedures, marketing plans, data, improvements, and strategies.

(ii) All patents, copyrights, trademarks, service marks, tradenames, and other marks and names and all rights and applications relating thereto, including, but not limited to, those listed on Attachment 1 hereto.

(iii) All lists of customers, prospective customers, suppliers, or prospective suppliers and the technical requirements of customers.

(iv) All software, algorithms, processes, databases, technology, trade secrets, and know-how.

(v) All documentation, product literature, sales literature, listings, diagrams, flow charts, manuals, technical notes, memoranda, records, notebooks, and all other physical manifestations of the Collateral and all copies or reproductions thereof, whether on cards, disk, diskette, tape, hard copy, or other form.

The Collateral includes all of the foregoing now owned or hereafter acquired or developed by Debtor, all improvements, modifications, substitutions, products, and replacements thereof and all proceeds and royalties derived therefrom.

Notwithstanding any other provision of this Security Agreement, the Collateral specifically excludes software imbedded in any equipment, as well as codes, books and records and warranties associated with any equipment.

Permitted Liens: Security Interest in some or all of the Collateral granted to CIT Healthcare LLC. and Purchase money security interests granted for equipment purchases by Debtor.

ATTACHMENT 1
INTELLECTUAL PROPERTY

Owned patents, trademarks, service marks, and applications therefor:

1. The following trademarks and service marks:

USPTO approved registration:

- ELAD[®] Registration No: 2504821; Serial No: 75/183137; good for ten years from 11/16/2007 acceptance date

SAIC China approved registrations:

- Class 10 in English No: 4430817; in Chinese No: 4430821; and combined No: 4430805
- Class 5 English No: 4430816
- Class 11 combined No: 4460780
- Class 20 combined No: 4460781
- Class 35 Chinese No: 4430822; combined No: 4430806
- Class 37 combined No: 4460783
- Class 40 combined No: 4460784
- Class 42 combined No: 4460786
- Class 44 English No: 4430819; Chinese No: 4430823; combined No: 4430807

Singapore approved registration:

- Class 10 English No: T0905808A; good for ten years from 5/27/09 acceptance date

Singapore applications:

- Class 10 application Chinese No: T0909136D
- Classes 5, 40 and 42 combined English and Chinese No: T0909139I
- Class 44 in English No: T0909137B; in Chinese No. T0909138J

2. The following patents and patent applications:

Patent	“Permanent Human Hepatocyte Cell Line And Its Use In A Liver Assist Device (LAD)”
Date of Patent	March 1, 1994 (U.S.)
Patent #	5,290,684
Countries	United States, Europe, Japan, Australia
Brief Description	Relates to permanent cell lines of hepatocytes with liver functions and methods of their use, particularly the use of the cell line in liver assist devices and in studying metabolism and regulation of liver cells.
Patent	“Organ Support System”
Date of Patent	November 29, 1994 (U.S.)
Patent #	5,368,555
Brief Description	Relates to an organ support system and method for sustaining a patient, and more particularly to an organ support system having a cell line which mimics or supports the function of a specific bodily organ e.g., liver, kidney, etc.
Patent	“C3A Serum-Free Clonal Cell Line and Methods of Use”
Date of Patent	June 24, 2008 (U.S.)
Patent #	7,390,651
Brief Description	Relates to a clone of the C3A cell line that will grow in serum free medium. This will allow production of ELAD [®] cartridges without the need for calf serum in the tissue culture medium.
Patent	“Metabolic Detoxification System and Method”
Date of Filing	April 26, 2004 (U.S. and Worldwide, including China)
Patent #	Pending; US Application 20050236329
Brief Description	Relates to an advanced metabolic detoxification and support system and method for sustaining a patient, and specifically to a system having the C3A cell line.
Patent	“Immortal Non-Tumorigenic Human Hepatocyte Cell Line”
Date of Patent	Claims and Specification Drafted
Patent	“Up Regulation of Detoxification Activities of Hepatocyte Based Liver Assist Systems”
Date of Patent	Claims and Specification Drafted

The Company's rights in and to exclusive licenses for the following patents and patent applications:

None.

SCHEDULE A

Versant Venture Capital III, L.P.
3000 Sand Hill Road
Building 4, Suite 210
Menlo Park, CA 94025

Versant Side Fund III, L.P.
3000 Sand Hill Road
Building 4, Suite 210
Menlo Park, CA 94025

MedVenture Associates V, L.P.
Attn: Charlie Lamos
5980 Horton Street
Suite 390
Emeryville, CA 94608

MedVen Affiliates V, L.P.
Attn: Charlie Lamos
5980 Horton Street
Suite 390
Emeryville, CA 94608

Valley Ventures III, L.P.
John M. Holliman, Managing
Member
80 E. Rio Salado Parkway
Suite 705
Tempe, AZ 85281

Valley Ventures III Annex, L.P.
John M. Holliman,
Managing Member
1275 W. Washington Street
Suite 101
Tempe, AZ 85281

Landmark Equity Partners XIII, L.P.
10 Mill Pond Lane
Simsbury, CT 06070
Attn: Scott P. Connors, C.F.A.,
Partner

Cotton Family Limited Partnership, LLP
c/o Jennifer May Jones

The Maricopa Partnerships, LLC
2702 E Shaw Butte Drive
Phoenix, AZ 85028-1122

Wedbush Morgan Sec Ctdn IRA for John C. Cotton A/C #2750-0064
C/O Gene Harries
Wedbush Morgan Securities, Inc.
100 Concord Place
2999 N 44th Street
Phoenix, AZ 85018

John C. Cotton and Janet H. Cotton
Apartado Postal 452
Puerto Vallarta, Jalisco 48340
Mexico

John C. Cotton
Apartado Postal 452
Puerto Vallarta, Jalisco 48340
Mexico

Paul J. Renze
5 Three Lakes Road
Barrington Hills, IL 60010

Cramer Taos Partners
c/o GOM Capital
Gerald Kramer
707 Westchester Avenue
White Plains, NY 10604
Attn: Chrissy

Journeys End Partners
c/o GOM Capital
Gerald Kramer
707 Westchester Avenue
White Plains, NY 10604
Attn: Chrissy

Greenwood Gulch Ventures, LLC
1873 S. Bellaire St., Suite 930
Denver CO 80222
Attn: Donald D. Rosenkrans, Jr.

Robert F. Kibble Living Trust
Dated 12/28/1990
C/O Robert Kibble

Mission Ventures
11455 El Camino Real
Suite 450
San Diego, CA 92130

Vanessa Kibble 2004 Holding Trust
C/O Robert Kibble
Mission Ventures
11455 El Camino Real
Suite 450
San Diego, CA 92130

Robert F.J. Kibble 2003 Holding Trust
Robert Kibble
Mission Ventures
11455 El Camino Real
Suite 450
San Diego, CA 92130

Shabar Cobb 2004 Holding Trust
C/O Robert Kibble
Mission Ventures
11455 El Camino Real
Suite 450
San Diego, CA 92130

Steven J. Pfrenzinger and Margaret A. Pfrenzinger Family Trust dated 03/25/83
73-987 Desert Garden Trail
Palm Desert, CA 92260

Kung Family Trust dated 2/8/2002
Frank Kung
Vivo Ventures
575 High Street, Suite 201
Palo Alto, CA 94301

Keith W. Baum
10347 N. 50th Place
Paradise Valley, AZ 85253

Randy C. Steer
40-710 Morningstar Road
Rancho Mirage, CA 92270-4080

Joann M. Orovitz Trust Dated 9/7/1995
Joann Orovitz
624 Pear Blossom Court

Roseville, CA 95747

Raulee Marcus
3335 Highland Avenue
Hermosa Beach, CA 90254

Joseph B. Weiss
18422 Calle La Serra
Rancho Santa Fe 92091

Aron Stern
3482 Corte Clarita
Carlsbad, CA 92009

Engleman Family Trust
60 Lane Place
Atherton, CA 94027

Jack Florio
7675 La Jolla Blvd. #104
La Jolla, CA 92037

Troy Zander
4380 Hilldale Road
San Diego, CA 92116

ADDENDUM AND SUPPLEMENT TO
PURCHASE AGREEMENT
AND
SECURITY AGREEMENT

This Addendum, made as of November 30, 2009, by and among **Vital Therapies, Inc.**, a Delaware corporation ("Company"), and each of the Investors listed on Schedule A (each, a "New Lender" and, together, the "New Lenders").

BACKGROUND

The Company and certain Lenders are parties to a Convertible Note and Warrant Purchase Agreement dated September 25, 2009 ("Purchase Agreement"; all terms defined in the Purchase Agreement to have the same meanings herein), a Security Agreement dated September 25, 2009 ("Security Agreement"), an Addendum and Supplement to Purchase Agreement and Security Agreement dated October 20, 2009 ("Addendum") and Notes and Warrants issued pursuant to the Purchase Agreement and Addendum. The Purchase Agreement permitted Additional Closings to occur at any time on or before October 30, 2009. The Purchase Agreement, Security Agreement, Notes and Warrants can be amended with the consent of the Company and the holders of at least a majority in interest of the Notes ("Majority Holders") issued under the Purchase Agreement and pursuant to an Extension Agreement dated October 29, 2009 the Purchase Agreement, Security Agreement, Notes and Warrants were amended to permit Additional Closings to be held at any time on or before November 30, 2009. The Company and the New Lenders desire to provide for a purchase and sale of additional Notes and Warrants pursuant to the terms of the Purchase Agreement, as amended, and to supplement the Security Agreement so that the Security Agreement also secures such additional Notes.

AGREEMENT

In consideration of the mutual promises contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the New Lenders agree as follows:

1. Note and Warrants. The Company agrees to issue to each New Lender a Convertible Promissory Note ("New Note") substantially in the form of the Notes delivered at the Initial Closing under the Purchase Agreement, and a Stock Purchase Warrant substantially in the form of the Warrants delivered at the Initial Closing and each New Lender agrees to lend the Company the amount equal to the New Lender's Commitment, as set forth opposite the New Lender's name on Schedule A attached hereto. The obligations of the New Lenders to purchase New Notes and Warrants are several and not joint. The Security Agreement is hereby supplemented in accordance with its terms so that it also secures the New Notes issued to the New Lenders, and the Company will execute (if required) and file an amendment to the Financing Statement and an amendment to any patent or trademark assignments filed in connection with the Initial Closing, adding the New Lenders as Secured Parties and assignees thereunder.

2. Additional Closing. The execution of this Addendum and the New Notes and Warrants to be issued to the New Lenders will take place at an Additional Closing. The New Notes and Warrants sold pursuant to this Addendum will be treated the same as the Notes and Warrants purchased at the Initial Closing under the Purchase Agreement (except for the date interest begins to accrue on the Notes, which will be from the date of each respective purchase) and, by its execution of this Addendum, each New Lender agrees to be a party to and bound by, and agrees that the New Notes and Warrants purchased by it are subject to, the Purchase Agreement and the Security Agreement and all representations, warranties, covenants, and agreements contained therein. Each New Lender hereby makes the same representations and warranties as were made by each Lender under the Purchase Agreement. Each New Lender hereby agrees to the appointment and hereby irrevocably appoints Ross Jaffe, M.D., as Lender Representative, pursuant to the terms of the Purchase Agreement and Security Agreement. In addition, each New Lender who is not already a party to the Ancillary Agreements, hereby agrees to be a party to each of the Ancillary Agreements with respect to any New Securities or Series C Preferred Stock which may become issuable upon conversion of the New Notes and/or exercise of the Warrants and Special Warrants and the Common Stock issuable upon conversion of such New Securities or Series C Preferred Stock and such Lender's signature page to this Addendum will also constitute a counterpart signature page to the Ancillary Agreements. Each New Lender who was previously a party to the Ancillary Agreements acknowledges and agrees that the New Securities or Series C Preferred Stock that may become issuable upon conversion of the New Notes and/or exercise of the Warrants and Special Warrants and any Common Stock issuable upon conversion of such New Securities or Series C Preferred Stock will be subject to the provisions of the Ancillary Agreements in accordance with their terms.

3. Entire Agreement. This Addendum, the Purchase Agreement, and the documents referred to herein and therein constitute the entire agreement between the parties hereto pertaining to the subject matter hereof.

[Remainder of page intentionally left blank;
signature pages follow]



IN WITNESS WHEREOF, the parties have caused this Addendum to be duly executed and delivered as of the date written above.

COMPANY:

Vital Therapies, Inc., a Delaware corporation

By: [Signature]
Its: CHIEF FINANCIAL OFFICER AND SECRETARY

NEW LENDER:

For Entity:

JOHN STUART LEWIS
ROLLOVER IRA ACCT# 02137059
Name of Lender

By: [Signature]
Its: ACCOUNT HOLDER / SERVICING AGENT

For Individual:

Signature of Lender

Name of Lender

IN WITNESS WHEREOF, the parties have caused this Addendum to be duly executed and delivered as of the date written above.

COMPANY:

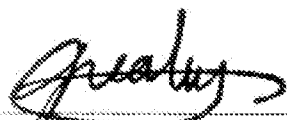
Vital Therapies, Inc., a Delaware corporation

By: 
Its: CHIEF FINANCIAL OFFICER AND SECRETARY

NEW LENDER:

For Entity:

DFJ DragonFund China, L.P.
Name of Lender

By: 
Its: Larry Li, Managing Director

For Individual:

Signature of Lender

Name of Lender

IN WITNESS WHEREOF, the parties have caused this Addendum to be duly executed and delivered as of the date written above.

COMPANY:

Vital Therapies, Inc., a Delaware corporation

By: 

Its:

CHIEF FINANCIAL OFFICER AND SECRETARY

NEW LENDER:

For Entity:

DEJ DragonFund Partners, LLC

Name of Lender

By: 

Its:

Timothy C. Draper, Managing Member

For Individual:

Signature of Lender

Name of Lender

IN WITNESS WHEREOF, the parties have caused this Addendum to be duly executed and delivered as of the date written above.

COMPANY:


Vital Therapies, Inc., a Delaware corporation

By: 
Its: CHIEF FINANCIAL OFFICER AND SECRETARY

NEW LENDER:

For Entity:

Draper Fisher Jurvetson Fund VIII, L.P.
Name of Lender

By: 
Its: John Fisher, Managing Director

For Individual:

Signature of Lender

Name of Lender

IN WITNESS WHEREOF, the parties have caused this Addendum to be duly executed and delivered as of the date written above.

COMPANY:

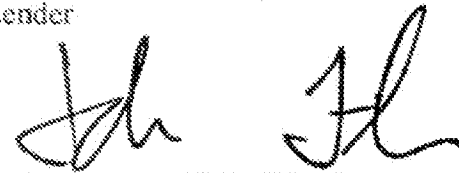
Vital Therapies, Inc., a Delaware corporation

By: 
Its: CHIEF FINANCIAL OFFICER AND SECRETARY

NEW LENDER:

For Entity:

Draper Fisher Jurvetson Partners VIII, LLC
Name of Lender

By: 
Its: John Fisher, Managing Member

For Individual:

Signature of Lender

Name of Lender

IN WITNESS WHEREOF, the parties have caused this Addendum to be duly executed and delivered as of the date written above.

COMPANY:

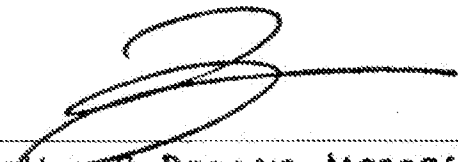
Vital Therapies, Inc., a Delaware corporation

By: 
Its: CHIEF FINANCIAL OFFICER AND SECRETARY

NEW LENDER:

For Entity:

JABE, LLC
Name of Lender

By: 
Its: Timothy C. Draper, Managing Member

For Individual:

Signature of Lender

Name of Lender

IN WITNESS WHEREOF, the parties have caused this Addendum to be duly executed and delivered as of the date written above.

COMPANY:

Vital Therapies, Inc., a Delaware corporation

By: Asa StemIts: CHIEF FINANCIAL OFFICER AND SECRETARY

NEW LENDER:

For Entity:

Toucan Capital
Name of Lender

By: Linda F PowersIts: Managing Director

For Individual:

Signature of Lender

Name of Lender

SCHEDULE A

Equity Trust Company dba Sterling Trust Custodian FBO John Lewis
ATTN: Jeremy Christensen
National Marketing Representative
Sterling Trust
7901 Fish Pond Road, Waco, TX 76710

DFJ DragonFund China, L.P.
c/o DFJ Dragon
2882 Sand Hill Road, Suite 150
Menlo Park, CA 94025
ATTN: Larry Li

DFJ DragonFund Partners, LLC
c/o DFJ Dragon
2882 Sand Hill Road, Suite 150
Menlo Park, CA 94025
ATTN: Larry Li

Draper Fisher Jurvetson Fund VIII, L.P.
c/o DFJ Dragon
2882 Sand Hill Road, Suite 150
Menlo Park, CA 94025
ATTN: Larry Li

Draper Fisher Jurvetson Partners VIII, LLC
c/o DFJ Dragon
2882 Sand Hill Road, Suite 150
Menlo Park, CA 94025
ATTN: Larry Li

JABE, LLC
c/o DFJ Dragon
2882 Sand Hill Road, Suite 150
Menlo Park, CA 94025
ATTN: Larry Li

Toucan Capital Fund II, L.P.
7600 Wisconsin Avenue
7th Floor
Bethesda, MD 20814
ATTN: Linda Powers