



Tab Settings:

101106737

To the Honorable Commissioner of Patents and Trademarks, Washington, DC 20530, and attached original documents or copy thereof.

1. Name of conveying party(ies):  
**Precision Therapeutics, Inc.**

Individual(s)       Association  
 General Partnership       Limited Partnership  
 Corporation-State  
 Other: \_\_\_\_\_

Additional names of conveying party(ies) attached?     Yes     No

2. Name and address of receiving party(ies):

Name: **National City Bank of Pennsylvania**

Internal Address: \_\_\_\_\_

Street Address: **20 Stanwix Street**

City: **Pittsburgh**      State: **PA**      ZIP: **15222**

Individual(s) citizenship: \_\_\_\_\_  
 Association: \_\_\_\_\_  
 General Partnership: \_\_\_\_\_  
 Limited Partnership: \_\_\_\_\_  
 Corporation-State: \_\_\_\_\_  
 Other: **national banking association**

If assignee is not domiciled in the United States, a domestic representative designation is attached:     Yes     No  
(Designations must be a separate document from Assignment)  
Additional name(s) & address(es) attached?     Yes     No

3. Nature of conveyance: **7-99-99**

Assignment       Merger  
 Security Agreement       Change of Name  
 Other: \_\_\_\_\_

Execution Date: **July 15, 1999**

4. Application number(s) or registration number(s):

A. Trademark Application No.(s)  
**75/492,840**

Additional numbers attached?     Yes     No

B. Trademark registration No.(s)

5. Name and address of party to whom concerning document should be mailed:

Name: **Michael L. Dever**

Internal Address: **Buchanan Ingersoll, P.C.**

Street Address: **301 Grant Street**  
**20th Floor**

City: **Pittsburgh**      State: **PA**      ZIP: **15219**

6. Total number of applications and registrations involved: **1**

7. Total fee (37 CFR 3.41): \$ **40.00**

Enclosed  
 Authorized to be charged to deposit account

8. Deposit account number: \_\_\_\_\_

(Attach duplicate copy of this page if paying by deposit account)

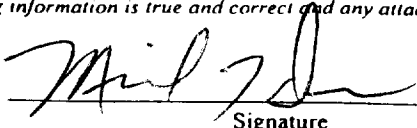
07/30/1999 DNGUYEN 00000251 75492840  
01 FC:481      40.00 OP

DO NOT USE THIS SPACE

40E

9. Statement and signature.

*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.*

**Michael L. Dever**            **7/27/99**

Name of Person Signing      Signature      Date

Total number of pages comprising cover sheet: **12**

CERTIFICATION

I hereby certify that the Patent, Trademark and Copyright Security Agreement between Precision Therapeutics, Inc. and National City Bank of Pennsylvania is a true and exact copy of the original Patent, Trademark and Copyright Security Agreement.

*July 27, 1999*  
Date

*Angelina F. Beyerl*  
Angelina F. Beyerl

Notarial Seal  
Angelina F. Beyerl Notary Public  
Pittsburgh, Allegheny County  
My Commission Expires Sept. 24, 2000  
Member, Pennsylvania Association of Notaries

# PATENT, TRADEMARK AND COPYRIGHT SECURITY AGREEMENT

This Patent, Trademark and Copyright Collateral Security Agreement (the "Agreement"), dated as of July 15, 1999, is entered into by and between PRECISION THERAPEUTICS, INC., a Pennsylvania corporation (the "Assignor"), and NATIONAL CITY BANK OF PENNSYLVANIA, a national banking association (the "Assignee").

WHEREAS, pursuant to that certain Credit and Security Agreement (as amended, restated, modified or supplemented from time to time, the "Credit Agreement") dated as of July 15, 1999 by and between Assignor and Assignee, Assignee has agreed to provide certain loans to the Assignor, and the Assignor has agreed, among other things, to assign to the Assignee certain patents, trademarks, copyrights and other property as security for such loans and other obligations as more fully described herein.

NOW, THEREFORE, intending to be legally bound hereby, the parties hereto agree as follows:

1. Except as otherwise expressly provided herein, capitalized terms used in this Agreement shall have the respective meanings given to them in the Credit Agreement.
2. To secure the payment and performance of the Liabilities and all other indebtedness and other obligations of the Assignor now or hereafter existing under the Credit Agreement and the other Loan Documents, including, without limitation, principal, interest, fees, expenses, costs and expenses of enforcement, reasonable attorney's fees and expenses, and obligations under indemnification provisions in the Loan Documents (collectively, the "Secured Obligations"), Assignor hereby grants, assigns and conveys to Assignee a security interest in all right, title and interest of Assignor in and to all trade names, patent applications, patents, trademark applications, trademarks and copyrights whether now owned or hereafter acquired by Assignor, including, without limitation, those listed on Schedule A hereto, including all proceeds thereof (such as, by way of example, license royalties and proceeds of infringement suits), the right to sue for past, present and future infringements, all rights corresponding thereto throughout the world and all reissues, divisions, continuations, renewals, extensions and continuations-in-part thereof, and the goodwill of the business to which any of the patents, trademarks and copyrights relate (collectively, the "Patents, Trademarks and Copyrights").
3. Assignor covenants and warrants that:
  - (a) the Patents, Trademarks and Copyrights listed on Schedule A are subsisting and have not been adjudged invalid or unenforceable, in whole or in part;
  - (b) to the best of Assignor's knowledge, each of the Patents, Trademarks and Copyrights is valid and enforceable;

(c) except as set forth on Schedule B hereto and except for Permitted Liens, Assignor is the sole and exclusive owner of the entire and unencumbered right, title and interest in and to each of the Patents, Trademarks and Copyrights, free and clear of any liens, charges and encumbrances, including without limitation pledges, assignments, licenses, shop rights and covenants by Assignor not to sue third persons;

(d) Assignor has the corporate power and authority to enter into this Agreement and perform its terms;

(e) no claim has been made to Assignor or, to the knowledge of Assignor, any other person that the use of any of the Patents, Trademarks and Copyrights does or may violate the rights of any third party;

(f) Assignor has used, and will continue to use for the duration of this Agreement, consistent standards of quality in its manufacture of products sold under the Patents, Trademarks and Copyrights; and

(g) Assignor has used, and will continue to use for the duration of this Agreement, proper statutory notice in connection with its use of the Patents, Trademarks and Copyrights.

4. Assignor agrees that, until all of the Secured Obligations shall have been satisfied in full, it will not enter into any agreement (for example, a license agreement) which is inconsistent with Assignor's obligations under this Agreement, without Assignee's prior written consent which shall not be unreasonably withheld.

5. If, before the Secured Obligations shall have been satisfied in full, Assignor shall own any new trademarks or any new copyrightable or patentable inventions, or any patent application or patent for any reissue, division, continuation, renewal, extension, or continuation in part of any Patent, Trademark or Copyright or any improvement on any Patent, Trademark or Copyright, the provisions of this Agreement shall automatically apply thereto and Assignor shall give to Assignee prompt notice thereof in writing. Assignor and Assignee agree to modify this Agreement by amending Schedule A to include any future patents, patent applications, trademark applications, trademarks, copyrights or copyright applications and the provisions of this Agreement shall apply thereto.

6. Until the occurrence of an Event of Default under the Credit Agreement, Assignor shall have the exclusive, nontransferable right and license under the Patents, Trademarks and Copyrights to make, have made for it, use and sell the inventions and products disclosed and claimed in the Patents, Trademarks and Copyrights for Assignor's own benefit. All use by Assignor of the trademarks which are part of the Patents, Trademarks and Copyrights shall inure to the benefit of Assignee in accordance with the terms of this Agreement. Assignor agrees not to sell or assign its interest in, or grant any sublicense under, the license granted to

Assignor in this Paragraph 6, without the prior written consent of Assignee which shall not be unreasonably withheld.

7. After the occurrence and during the continuance of an Event of Default under the Credit Agreement, Assignee shall have, in addition to all other rights and remedies given it by this Agreement, those allowed by Law and the rights and remedies of a secured party under the Uniform Commercial Code as enacted in any jurisdiction in which the Patents, Trademarks and Copyrights may be located and, without limiting the generality of the foregoing, Assignee may, without demand of performance and without other notice (except as set forth below) or demand whatsoever to Assignor, all of which are hereby expressly waived, and without advertisement, sell at public or private sale or otherwise realize upon, in Pittsburgh, Pennsylvania, or elsewhere, the whole or from time to time any part of the Patents, Trademarks and Copyrights, or any interest which Assignor may have therein, and after deducting from the proceeds of sale or other disposition of the Patents, Trademarks and Copyrights all expenses (including fees and expenses for brokers and reasonable attorneys' fees), shall apply the remainder of such proceeds toward the payment of the Secured Obligations as the Assignee, in its sole discretion, shall determine. Any remainder of the proceeds after payment in full of the Secured Obligations shall be paid over to Assignor. Notice of any sale or other disposition of the Patents, Trademarks and Copyrights shall be given to Assignor at least ten (10) days before the time of any intended public or private sale or other disposition of the Patents, Trademarks and Copyrights is to be made, which Assignor hereby agrees shall be reasonable notice of such sale or other disposition. At any such sale or other disposition, Assignee may, to the extent permissible under applicable Law, purchase the whole or any part of the Patents, Trademarks and Copyrights sold, free from any right of redemption on the part of Assignor, which right is hereby waived and released.

8. If any Event of Default shall have occurred and be continuing, Assignor hereby authorizes and empowers Assignee to make, constitute and appoint any officer or agent of Assignee, as Assignee may select in its exclusive discretion, as Assignor's true and lawful attorney-in-fact, with the power to endorse Assignor's name on all applications, documents, papers and instruments necessary for Assignee to use the Patents, Trademarks and Copyrights, or to grant or issue, on commercially reasonable terms, any exclusive or nonexclusive license under the Patents, Trademarks and Copyrights to any third person, or necessary for Assignee to assign, pledge, convey or otherwise transfer title in or dispose, on commercially reasonable terms, of the Patents, Trademarks and Copyrights to any third Person. Assignor hereby ratifies all that such attorney shall lawfully do or cause to be done by virtue hereof. This power of attorney, being coupled with an interest, shall be irrevocable for the life of this Agreement.

9. At such time as Assignor shall have indefeasibly paid in full all of the Secured Obligations and the commitments of the Assignee to extend any additional credit to the Assignor shall have terminated, this Agreement shall terminate and Assignee shall execute and deliver to Assignor all deeds, assignments and other instruments as may be necessary or proper to re-vest in Assignor full title to the Patents, Trademarks and Copyrights, subject only to any disposition thereof which may have been made by Assignee pursuant to this Agreement, the Credit Agreement or any other Loan Document.

10. Any and all fees, costs and expenses, of whatever kind or nature, including reasonable attorney's fees and expenses incurred by Assignee in connection with the preparation of this Agreement and all other documents relating hereto and the consummation of this transaction, the filing or recording of any documents (including all taxes in connection therewith) in public offices, the payment or discharge of any taxes, counsel fees, maintenance fees, encumbrances, the protection, maintenance or preservation of the Patents, Trademarks and Copyrights, or the defense or prosecution of any actions or proceedings arising out of or related to the Patents, Trademarks and Copyrights, shall be borne and paid by Assignor within fifteen (15) days of demand by Assignee, and if not paid within such time, shall be added to the principal amount of the Secured Obligations and shall bear interest at the highest rate prescribed in the Credit Agreement.

11. Assignor shall have the duty, through counsel reasonably acceptable to Assignee, to prosecute diligently any patent applications of the Patents, Trademarks and Copyrights pending as of the date of this Agreement or thereafter until the Secured Obligations shall have been indefeasibly paid in full and the commitments of the Assignee to extend any additional credit to the Assignor shall have terminated, to make application on unpatented but patentable inventions (whenever it is commercially reasonable in the reasonable judgment of Assignor to do so) and to preserve and maintain all rights in patent applications and patents, including without limitation the payment of all maintenance fees. Any expenses incurred in connection with such an application shall be borne by Assignor. Assignor shall not abandon any Patent, Trademark or Copyright without the consent of Assignee, which shall not be unreasonably withheld.

12. Assignor shall have the right, with the consent of Assignee, which shall not be unreasonably withheld, to bring suit, action or other proceeding in its own name, and to join Assignee, if necessary, as a party to such suit so long as Assignee is satisfied that such joinder will not subject it to any risk of liability, to enforce the Patents, Trademarks and Copyrights and any licenses thereunder. Assignor shall promptly, upon demand, reimburse and indemnify Assignee for all damages, costs and expenses, including reasonable legal fees, incurred by Assignee as a result of such suit or joinder by Assignor.

13. No course of dealing between Assignor and Assignee, nor any failure to exercise nor any delay in exercising, on the part of Assignee, any right, power or privilege hereunder or under the Credit Agreement or other Loan Documents shall operate as a waiver of such right, power or privilege, nor shall any single or partial exercise of any right, power or privilege hereunder or thereunder preclude any other or further exercise thereof or the exercise of any other right, power or privilege.

14. All of Assignee's rights and remedies with respect to the Patents, Trademarks and Copyrights, whether established hereby or by the Credit Agreement or by any other agreements or by Law, shall be cumulative and may be exercised singularly or concurrently.

15. The provisions of this Agreement are severable, and if any clause or provision shall be held invalid and unenforceable in whole or in part in any jurisdiction, then such

invalidity or unenforceability shall affect only such clause or provision, or part thereof, in such jurisdiction, and shall not in any manner affect such clause or provision in any other jurisdiction, or any clause or provision of this Agreement in any jurisdiction.

16. This Agreement is subject to modification only by a writing signed by the parties, except as provided in Paragraph 5.

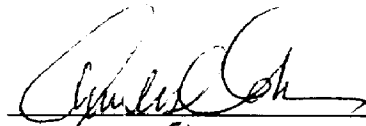
17. The benefits and burdens of this Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns of the parties.

18. This Agreement shall be governed by and construed in accordance with the internal Laws of the Commonwealth of Pennsylvania without regard to its conflicts of law principles.


[SIGNATURES APPEAR ON NEXT PAGE]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective officers or agents thereunto duly authorized, as of the date first above written.

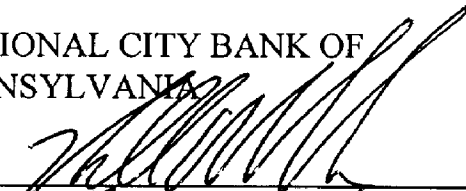
ATTEST:

  
\_\_\_\_\_  
Title: Secretary

PRECISION THERAPEUTICS, INC.

By:   
\_\_\_\_\_  
Name: PAUL L. KORNBLITH  
Title: PRESIDENT

NATIONAL CITY BANK OF  
PENNSYLVANIA

By:   
\_\_\_\_\_  
Title: MICHAEL A. HEINRICHER - AUP



**SCHEDULE A**

ISSUED UNITED STATES PATENT

<u>U.S. Patent No.</u>	<u>Title</u>	<u>Granted</u>
5,728,541	"Precise Efficacy Assay Methods for Active Agent Including Chemotherapeutic Agents" File No. 960878	March 17, 1998

PENDING UNITED STATES PATENT APPLICATIONS

<u>U.S. Appln. No.</u>	<u>Title</u>	<u>Filed</u>
09/039,957	"Precise Efficacy Assay Methods for Active Agents Including Chemotherapeutic Agents" File No. 970451 (CIP of 960878)	March 16, 1998
09/040,161	"Method for Preparing Cell Cultures from Biological Specimens for Chemotherapeutic and Other Assays" File No. 980383 (Con. Of 960878)	March 17, 1998
09/095,993	"Staining Agents and Protocols for Characterizing Malignant Cells in Culture" File No. 980635 (CIP of 980383)	June 11, 1998
09/189,310	"Multi-Stage Method for Analyzing ..." File No. 980959	November 10, 1998

INTERNATIONAL PATENT APPLICATION

<u>Appln. No.</u>	<u>Title</u>	<u>Filed</u>
PCT/US97/11595	"Precise Efficacy Assay Methods for Active Agents Including Chemotherapeutic Agents" File No. 970738	July 10, 1997
Australia 36493/97	"Precise Efficacy Assay Methods for Active Agents Including Chemotherapeutic Agents" File No. 981926	July 10, 1997
Brazil 97010438-9	"Precise Efficacy Assay Methods for Active Agents Including Chemotherapeutic Agents" File No. 981927	July 10, 1997
Canada 2,259,984	"Precise Efficacy Assay Methods for Active Agents Including Chemotherapeutic Agents" File No. 981928	July 10, 1997
China 97196143.3	"Precise Efficacy Assay Methods for Active Agents Including Chemotherapeutic Agents" File No. 981929	July 10, 1997
EPO 97.933267.3	"Precise Efficacy Assay Methods for Active Agents Including Chemotherapeutic Agents" File No. 981930	July 10, 1997

Israel  
127,964

"Precise Efficacy  
Assay Methods for  
Active Agents  
Including  
Chemotherapeutic  
Agents"  
File No. 981931

July 10, 1997

Japan  
10-506069

"Precise Efficacy  
Assay Methods for  
Active Agents  
Including  
Chemotherapeutic  
Agents"  
File No. 981932

July 10, 1997

New Zealand  
333830

"Precise Efficacy  
Assay Methods for  
Active Agents  
Including  
Chemotherapeutic  
Agents"  
File No. 981933

July 10, 1997

PENDING UNITED STATES SERVICE MARK APPLICATION

U.S. Service  
Mark Appl. No.

Title

Filed

75/492,840

"ChemoFx"  
File No. 980438

May 25, 1998