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RECORDATION FORM COVER SHEET PATENTS ONLY

Docket No.: 0399.2002-017

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below

<p>1. Name of conveying party(ies)/Execution Date(s)</p> <p>MICHAEL J. ROOT / 02/14/2000 MICHAEL S. KAY / 02/14/2000 DAVID C CHAN / 03/20/2000 PETER S. KIM / 02/07/2000 /</p> <p>Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>2. Name and address of receiving party(ies)</p> <p>Name: <u>WHITEHEAD INSTITUTE FOR BIOMEDICAL RESEARCH</u></p> <p>Internal Address: _____</p> <p>Street Address: <u>NINE CAMBRIDGE CENTER</u></p>
<p>3. Nature of conveyance</p> <p><input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Merger <input type="checkbox"/> Security Agreement <input type="checkbox"/> Change of Name <input type="checkbox"/> Other _____</p>	<p>City: <u>CAMBRIDGE</u> State: <u>MASSACHUSETTS</u> Country: <u>USA</u> Zip: <u>02142</u></p> <p>Additional name(s) & address(es) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>4. Application number(s) or patent number(s)</p> <p>A. Patent Application No.(s) <u>12/321,300</u></p>	<p><input type="checkbox"/> This document is being filed together with a new application. B. Patent No.(s)</p> <p>Additional numbers attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>5. Name and address of party to whom correspondence concerning document should be mailed</p> <p>Name: <u>ANNE J. COLLINS, ESQ.</u></p> <p>Internal Address: _____</p> <p><u>HAMILTON, BROOK, SMITH & REYNOLDS, P.C.</u></p> <p>Street Address: <u>530 VIRGINIA ROAD, P.O. BOX 9133</u></p> <p>City: <u>CONCORD</u> State: <u>MA</u> Zip: <u>01742-9133</u></p> <p>Phone No. <u>978-341-0036</u> Fax No <u>978-341-0136</u></p> <p>Email Address: <u>ANNE.COLLINS@HBSR.COM</u></p>	<p>6. Total number of applications and patents involved: <u>1</u></p> <p>7. Total Fee (37 CFR 1.21(h) & 3.41) <u>\$40.00</u></p> <p><input type="checkbox"/> Enclosed <input checked="" type="checkbox"/> Authorization to charge deposit account number 08-0380 <input type="checkbox"/> Previously submitted - Doc ID No. [] <input checked="" type="checkbox"/> Authorized to charge any deficiencies or credit any overpayment to deposit account number 08-0380</p>
<p>8. <u>VIVIEN J. TANNOCH-MAGIN</u> <u><i>V. Tannoch-Magin</i></u> <u>Feb. 6, 2009</u></p> <p align="center">Name of Person Signing Signature Date</p> <p align="center">Total number of pages including cover sheet, attachments, and documents <u>9</u></p>	

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PATENT
REEL: 022233 FRAME: 0635

Doc. No. 03992002000Provisional JointASSIGNMENT

WHEREAS, we, Michael J. Root, Michael S. Kay, David C. Chan and Peter S. Kim have invented a certain improvement in Five-Helix Protein described in a Provisional Patent Application, the specification of which:

[] is about to be filed in the United States Patent Office,

[X] was filed on December 16, 1999 as Application No. 60/171,042;

WHEREAS, Whitehead Institute for Biomedical Research (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Delaware, and having a usual place of business at Nine Cambridge Center, Cambridge, Massachusetts 02142 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said Provisional application, together with the entire right, title and interest in and to said Provisional application and such Letters Patent as may issue on said invention, said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

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AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any nonprovisional applications including substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved,

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor: Michael J. Root
Michael J. Root

State/Commonwealth
of Massachusetts
County of Norfolk

Then personally appeared before me the above-named Michael J. Root and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this 14 day of February 1999

(SEAL)

Julie C. Ellis Notary Public
Julie C. Ellis (print name)
My Commission expires 11 / 25 / 05

-3-

Inventor:

Michael S. Krzy

Michael S. Kay

State/Commonwealth

of Massachusetts

County of Norfolk

Then personally appeared before me the above-named Michael S. Kay and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this 14 day of February, 2022.

(SEAL)

A. L. Ellis Notary Public

Julie C Ellis (print name)

My Commission expires 11 / 25 / 05

Inventor.

David C. Chan

State/Commonwealth

OF _____

County of _____

Then personally appeared before me the above-named **David C. Chan** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this _____ day of _____, 19____.

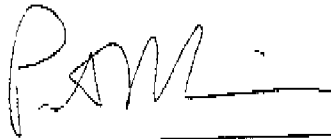
(SEAL)

_____, Notary Public

_____ (print name)

My Commission expires ____ / ____ / ____


-4-


Inventor: _____
Peter S. Kim for himself and as Agent for the
Howard Hughes Medical Institute

~~State~~/Commonwealth
of Massachusetts
County of Norfolk

Then personally appeared before me the above-named Peter S. Kim and acknowledged that
he/she executed the foregoing instrument as his/her free act and deed this 7
day of February, 192000

(SEAL)

 Notary Public
Julie C. Ellis (print name)
My Commission expires 11 / 25 / 05

(WHI REF No. WHI95-34P)
DOC ID NO. 119843

Doc. No. 0399.2002-000
(WHI99-34p)

Provisional Joint

ASSIGNMENT

WHEREAS, we, Michael J. Root, Michael S. Kay, David C. Chan and Peter S. Kim have invented a certain improvement in **Five-Helix Protein** described in a Provisional Patent Application, the specification of which

☐ is about to be filed in the United States Patent Office;

☒ was filed on December 16, 1999 as Application No 60/171,042;

WHEREAS, Whitehead Institute for Biomedical Research (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Delaware, and having a usual place of business at **Nine Cambridge Center, Cambridge, Massachusetts 02142** desires to acquire an interest therein in accordance with agreements duly entered into with us,

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said Provisional application, together with the entire right, title and interest in and to said Provisional application and such Letters Patent as may issue on said invention; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

-2-

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any nonprovisional applications including substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below

Inventor _____

Michael J. Root

Date _____

Address _____

Witness _____

Date _____

Address _____

Witness _____

Date _____

Address _____

-3-

Inventor _____ Date _____
Michael S. Kay

Address _____

Witness _____ Date _____

Address _____

Witness _____ Date _____

Address _____

Inventor _____ Date 3/20/00
David C. Chan

Address 2764 Heritage Drive
Pasadena CA 91107

Witness _____ Date 3/20/00

Address 2584 W. 1st St. (Raymond J. Deshaie?)
Clermont CA 91711

Witness Patricia Mendez Date 3.20.00

Address California Institute of Technology, Biology Division
1200 E. California Blvd, Pasadena, CA 91125

-4-

Inventor _____ Date _____
Peter S. Kim for himself and as Agent for the
Howard Hughes Medical Institute

Address _____

Witness _____ Date _____

Address _____

Witness _____ Date _____

Address _____

DGC ID NO 109842