

10-08-2003

Docket No.: 1855.2065-000

10/6/03

RECO



HEET

102570376

To the Director of the U.S. Patent and Trademark Office

original documents or copy thereof.

<p>1. Name of conveying party(ies)</p> <p>1. Douglas A. Holtzman 2. John D. Sharp 3. Kevin R. Leiby 4. Steven Bossonne 5. Yang Pan</p> <p>6. Thomas M. Barnes 7. Christopher C. Fraser 8. Nicholas Wrighton 9. Paul S. Myers 10. Gillian Kingsbury</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>Millennium Pharmaceuticals, Inc.</u></p> <p>Internal Address: _____</p> <p>Street Address: <u>75 Sidney Street</u></p> <p>City: <u>Cambridge</u> State: <u>MA</u> ZIP: <u>02139</u></p> <p>Additional name(s) & address(es) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>3. Nature of conveyance:</p> <p><input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Merger</p> <p><input type="checkbox"/> Security Agreement <input type="checkbox"/> Change of Name</p> <p><input checked="" type="checkbox"/> Other Corrected Cover Sheet Reel: 012638 Frame: 0572-0612</p> <p>Execution Date: 1. October 24, 2001 6. October 29, 2001 2. October 24, 2001 7. October 29, 2001 3. October 24, 2001 8. October 30, 2001 4. October 22, 2001 9. October 30, 2001 5. November 16, 2001 10. November 16, 2001</p>	

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

If this document is being filed together with a new application, the execution date of the application is: _____

<p>A. Patent Application No.(s)</p> <p><u>09/796,858</u></p>	<p>B. Patent No.(s)</p> <p>_____</p>
--------------------------------------------------------------	--------------------------------------

Additional numbers attached? ☐ Yes ☒ No

<p>5. Name and address of party to whom correspondence concerning document should be mailed:</p> <p>Name: <u>Helen E. Wendler, 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>6. Total number of applications and patents involved: <u>1</u></p> <p>7. Total Fee (37 C.F.R. 3.41)..... \$ <u>40.00</u></p> <p><input checked="" type="checkbox"/> Enclosed</p> <p><input checked="" type="checkbox"/> Authorized to charge any deficiencies or credit any overpayment to deposit account</p> <p><input type="checkbox"/> Authorized to be charged to deposit account</p> <p>8. Deposit account number: <u>08-0380</u></p> <p>(Attach duplicate copy of this page if paying by deposit account)</p>
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10/07/2003 DBYRNE 00000107 09796858

01 Fee: 40.00

DO NOT USE THIS SPACE

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.

<p>Helen E. Wendler</p> <p>Name of Person Signing</p>	<p><u>Helen E. Wendler 27964</u></p> <p>Signature</p>	<p><u>10-2-03</u></p> <p>Date</p>
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Total number of pages including cover sheet, attachments, and document: [42]

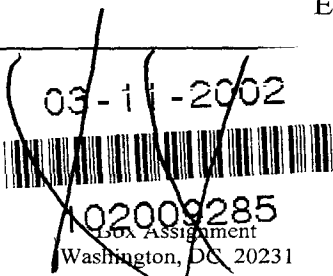


2-25-02

D \$

Express Mail Number: EL 501 742 263 US

MRD

Attorney Docket Number
7853-226-999

2/22/2

TO THE HONOR

TRADEMARKS

Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Douglas A. Holtzman Thomas M. Barnes
John D. Sharp Christopher C. Fraser
Kevin R. Leiby Nicholas Wright
Steven Bossone Paul S. Myers
Yang Pan Gillian Kingsbury

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

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

Name: Millennium Pharmaceuticals, Inc.Address: 75 Sidney StreetCambridge, Massachusetts 02139

Country (if other than USA): _____

3. Nature of conveyance:

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Other _____

Execution Date: October 24, 2001 October 29, 2001
October 24, 2001 October 29, 2001
October 24, 2001 October 30, 2001
October 22, 2001 October 30, 2001
November 16, 2001 November 16, 2001,
respectively

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

If this document is being filed together with a new application, the execution date of the application is: _____

A. Patent Application No.(s) 09/796,858 filed March 1, 2001

B. Patent No.(s) _____

Additional numbers attached? ☐ Yes ☒ No

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

PENNIE & EDMONDS LLP
1155 Avenue of Americas
New York, N.Y. 10036-2711

6. Number of applications and patents involved: One7. Total fee (37 CFR 3.41):.....\$ 40.00
Please charge to the deposit account listed in Section 8.8. Deposit account number:
16-1150

DO NOT USE THIS SPACE

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.

Laura A. Coruzzi
Name of Person Signing

30,742
Reg. No.

Signature

Laura A. Coruzzi

Date

February 22, 2002

Total number of pages (including cover sheet with duplicate):

42

Mail documents to be recorded with required cover sheet information to:
Commissioner of Patents & Trademarks, Box Assignment
Washington, D.C. 20231

03/08/2002 GTOW11 00000142 161150 09796858
01 FC:581 40.00 CH

NY2 - 1284886.1

PATENT
REEL: 014571 FRAME: 0622

ASSIGNMENT

WHEREAS, WE, **Douglas A. Holtzman** (a citizen of the United States, residing at 821 Centre Street, #6, Jamaica Plain, MA 02130); **John D. Sharp** (a citizen of the United States, residing at 245 Park Avenue, Arlington, MA 02476); **Kevin R. Leiby** (a citizen of the United States, residing at 4 Showhegan Way, Natick, MA 01760); **Steven Bossone** (a citizen of the United States, residing at 91 Bacon Street, Winchester, MA 01890); **Yang Pan** (a citizen of the People's Republic of China, residing 5308 135th Place SE, Bellevue, WA 98006); **Thomas M. Barnes** (a citizen of Australia, residing at 22 Hanson St. #2, Boston, MA 02118); **Christopher C. Fraser** (a citizen of the United States, residing at 52 Grassland Street, Lexington, MA 02421); **Nicholas Wrighton** (a citizen of the United Kingdom, residing at 18 Lloyd Street, Winchester, MA 01890); **Paul S. Myers** (a citizen of the United States, residing at 171 South Street, Unit 17A, Jamaica Plain, MA 02130); and **Gillian Kingsbury** (a citizen of the United Kingdom, residing at 23 Fletcher Street, Roslindale, MA 02131), ASSIGNORS, are the inventors of the invention in **NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES** for which we have executed an application for a Patent of the United States

- ☐ which is executed on ☐ even date herewith or ☐ _____
☒ which is identified by Pennie & Edmonds LLP docket no. 7853-226-999
☒ which was filed on **March 1, 2001**, Application No. **09/796,858**

and WHEREAS, Millennium Pharmaceuticals, Inc., ASSIGNEE is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date 10/24, 2001 Douglas A. Holtzman L.S.
DOUGLAS A. HOLTZMAN

State of Massachusetts
 County of Middlesex } SS.:

On Oct. 24, 2001, before me, Simonne Coriveau, Notary Public, personally appeared **DOUGLAS A. HOLTZMAN**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Simonne Coriveau
 My Commission expires: 9/1/2006

Date _____, 2001 JOHN D. SHARP L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **JOHN D. SHARP**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 KEVIN R. LEIBY L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **KEVIN R. LEIBY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 STEVEN BOSSONE L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **STEVEN BOSSONE**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 YANG PAN L.S.

Date _____, 2001 _____
Witnessed by

Date _____, 2001 _____
Witnessed by

Date _____, 2001 THOMAS M. BARNES L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **THOMAS M. BARNES**, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 CHRISTOPHER C. FRASER L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **CHRISTOPHER C. FRASER**, personally known to me on the basis of satisfactory evidence to be the
person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
NICHOLAS WRIGHTON

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **NICHOLAS WRIGHTON**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
PAUL S. MYERS

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **PAUL S. MYERS**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
GILLIAN KINGSBURY

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **GILLIAN KINGSBURY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

ASSIGNMENT

WHEREAS, WE, **Douglas A. Holtzman** (a citizen of the United States, residing at 821 Centre Street, #6, Jamaica Plain, MA 02130); **John D. Sharp** (a citizen of the United States, residing at 245 Park Avenue, Arlington, MA 02476); **Kevin R. Leiby** (a citizen of the United States, residing at 4 Showhegan Way, Natick, MA 01760); **Steven Bossone** (a citizen of the United States, residing at 91 Bacon Street, Winchester, MA 01890); **Yang Pan** (a citizen of the People's Republic of China, residing 5308 135th Place SE, Bellevue, WA 98006); **Thomas M. Barnes** (a citizen of Australia, residing at 22 Hanson St. #2, Boston, MA 02118); **Christopher C. Fraser** (a citizen of the United States, residing at 52 Grassland Street, Lexington, MA 02421); **Nicholas Wrighton** (a citizen of the United Kingdom, residing at 18 Lloyd Street, Winchester, MA 01890); **Paul S. Myers** (a citizen of the United States, residing at 171 South Street, Unit 17A, Jamaica Plain, MA 02130); and **Gillian Kingsbury** (a citizen of the United Kingdom, residing at 23 Fletcher Street, Roslindale, MA 02131), ASSIGNORS, are the inventors of the invention in **NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES** for which we have executed an application for a Patent of the United States

- ☐ which is executed on ☐ even date herewith or ☐ _____
☒ which is identified by Pennie & Edmonds LLP docket no. 7853-226-999
☒ which was filed on March 1, 2001, Application No. 09/796,858

and WHEREAS, Millennium Pharmaceuticals, Inc., ASSIGNEE is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date _____, 2001 _____ L.S.
DOUGLAS A. HOLTZMAN

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **DOUGLAS A. HOLTZMAN**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date Oct. 24, 2001, 2001 John D. Sharp L.S.
JOHN D. SHARP

State of Massachusetts
County of Middlesex SS.:

On Oct. 24, 2001, before me, Simonne Corriveau, Notary Public, personally appeared **JOHN D. SHARP**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Simonne Corriveau
My Commission expires: 9/1/2002

Date _____, 2001 KEVIN R. LEIBY L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **KEVIN R. LEIBY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 STEVEN BOSSONE L.S.

State of _____)
County of _____) SS.:

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WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
YANG PAN

Date _____, 2001 _____
Witnessed by _____

Date _____, 2001 _____
Witnessed by _____

Date _____, 2001 _____ L.S.
THOMAS M. BARNES

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **THOMAS M. BARNES**, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
CHRISTOPHER C. FRASER

State of _____)
County of _____ } SS.:

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capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
NICHOLAS WRIGHTON

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **NICHOLAS WRIGHTON**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
PAUL S. MYERS

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **PAUL S. MYERS**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

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State of _____)
County of _____ } SS.:

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WITNESS my hand and official seal

ASSIGNMENT

WHEREAS, WE, **Douglas A. Holtzman** (a citizen of the United States, residing at 821 Centre Street, #6, Jamaica Plain, MA 02130); **John D. Sharp** (a citizen of the United States, residing at 245 Park Avenue, Arlington, MA 02476); **Kevin R. Leiby** (a citizen of the United States, residing at 4 Showhegan Way, Natick, MA 01760); **Steven Bossone** (a citizen of the United States, residing at 91 Bacon Street, Winchester, MA 01890); **Yang Pan** (a citizen of the People's Republic of China, residing 5308 135th Place SE, Bellevue, WA 98006); **Thomas M. Barnes** (a citizen of Australia, residing at 22 Hanson St. #2, Boston, MA 02118); **Christopher C. Fraser** (a citizen of the United States, residing at 52 Grassland Street, Lexington, MA 02421); **Nicholas Wrighton** (a citizen of the United Kingdom, residing at 18 Lloyd Street, Winchester, MA 01890); **Paul S. Myers** (a citizen of the United States, residing at 171 South Street, Unit 17A, Jamaica Plain, MA 02130); and **Gillian Kingsbury** (a citizen of the United Kingdom, residing at 23 Fletcher Street, Roslindale, MA 02131), ASSIGNORS, are the inventors of the invention in **NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES** for which we have executed an application for a Patent of the United States

- ☐ which is executed on ☐ even date herewith or ☐ _____
☒ which is identified by Pennie & Edmonds LLP docket no. 7853-226-999
☒ which was filed on **March 1, 2001**, Application No. **09/796,858**

and WHEREAS, Millennium Pharmaceuticals, Inc., ASSIGNEE is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date _____, 2001 _____ L.S.
DOUGLAS A. HOLTZMAN

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **DOUGLAS A. HOLTZMAN**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 JOHN D. SHARP L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **JOHN D. SHARP**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date 10-24, 2001 Kevin R. Leiby L.S.
KEVIN R. LEIBY

State of Massachusetts
County of Middlesex } SS.:

On Oct. 24, 2001, before me, Simonne Corriveau, Notary Public, personally appeared **KEVIN R. LEIBY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Simonne Corriveau
My Commission expires: 9/1/2006

Date _____, 2001 STEVEN BOSSONE L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **STEVEN BOSSONE**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
YANG PAN

Date _____, 2001 _____
Witnessed by _____

Date _____, 2001 _____
Witnessed by _____

Date _____, 2001 _____ L.S.
THOMAS M. BARNES

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **THOMAS M. BARNES**, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
CHRISTOPHER C. FRASER

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **CHRISTOPHER C. FRASER**, personally known to me on the basis of satisfactory evidence to be the
person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.

NICHOLAS WRIGHTON

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **NICHOLAS WRIGHTON**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.

PAUL S. MYERS

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **PAUL S. MYERS**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.

GILLIAN KINGSBURY

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **GILLIAN KINGSBURY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

ASSIGNMENT

WHEREAS, WE, **Douglas A. Holtzman** (a citizen of the United States, residing at 821 Centre Street, #6, Jamaica Plain, MA 02130); **John D. Sharp** (a citizen of the United States, residing at 245 Park Avenue, Arlington, MA 02476); **Kevin R. Leiby** (a citizen of the United States, residing at 4 Showhegan Way, Natick, MA 01760); **Steven Bossone** (a citizen of the United States, residing at 91 Bacon Street, Winchester, MA 01890); **Yang Pan** (a citizen of the People's Republic of China, residing 5308 135th Place SE, Bellevue, WA 98006); **Thomas M. Barnes** (a citizen of Australia, residing at 22 Hanson St. #2, Boston, MA 02118); **Christopher C. Fraser** (a citizen of the United States, residing at 52 Grassland Street, Lexington, MA 02421); **Nicholas Wrighton** (a citizen of the United Kingdom, residing at 18 Lloyd Street, Winchester, MA 01890); **Paul S. Myers** (a citizen of the United States, residing at 171 South Street, Unit 17A, Jamaica Plain, MA 02130); and **Gillian Kingsbury** (a citizen of the United Kingdom, residing at 23 Fletcher Street, Roslindale, MA 02131), ASSIGNORS, are the inventors of the invention in **NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES** for which we have executed an application for a Patent of the United States

- ☐ which is executed on ☐ even date herewith or ☐ _____
☒ which is identified by Pennie & Edmonds LLP docket no. 7853-226-999
☒ which was filed on **March 1, 2001**, Application No. 09/796,858

and WHEREAS, Millennium Pharmaceuticals, Inc., ASSIGNEE is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date _____, 2001 DOUGLAS A. HOLTZMAN L.S.

State of _____)
 County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **DOUGLAS A. HOLTZMAN**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 JOHN D. SHARP L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **JOHN D. SHARP**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 KEVIN R. LEIBY L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **KEVIN R. LEIBY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

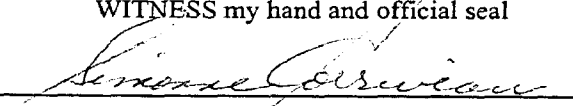
WITNESS my hand and official seal

Date October 22, 2001  L.S.
STEVEN BOSSONE

State of Massachusetts
County of Middlesex } SS.:

On 10/22, 2001, before me, Simonne Corriveau, Notary Public, personally appeared **STEVEN BOSSONE**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal



my Commission expires: 9/1/2006

Date _____, 2001 _____ L.S.
YANG PAN

Date _____, 2001 _____
Witnessed by _____

Date _____, 2001 _____
Witnessed by _____

Date _____, 2001 _____ L.S.
THOMAS M. BARNES

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **THOMAS M. BARNES**, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
CHRISTOPHER C. FRASER

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **CHRISTOPHER C. FRASER**, personally known to me on the basis of satisfactory evidence to be the
person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
NICHOLAS WRIGHTON

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **NICHOLAS WRIGHTON**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
PAUL S. MYERS

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **PAUL S. MYERS**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
GILLIAN KINGSBURY

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **GILLIAN KINGSBURY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

ASSIGNMENT

WHEREAS, WE, **Douglas A. Holtzman** (a citizen of the United States, residing at 821 Centre Street, #6, Jamaica Plain, MA 02130); **John D. Sharp** (a citizen of the United States, residing at 245 Park Avenue, Arlington, MA 02476); **Kevin R. Leiby** (a citizen of the United States, residing at 4 Showhegan Way, Natick, MA 01760); **Steven Bossone** (a citizen of the United States, residing at 91 Bacon Street, Winchester, MA 01890); **Yang Pan** (a citizen of the People's Republic of China, residing 5308 135th Place SE, Bellevue, WA 98006); **Thomas M. Barnes** (a citizen of Australia, residing at 22 Hanson St. #2, Boston, MA 02118); **Christopher C. Fraser** (a citizen of the United States, residing at 52 Grassland Street, Lexington, MA 02421); **Nicholas Wrighton** (a citizen of the United Kingdom, residing at 18 Lloyd Street, Winchester, MA 01890); **Paul S. Myers** (a citizen of the United States, residing at 171 South Street, Unit 17A, Jamaica Plain, MA 02130); and **Gillian Kingsbury** (a citizen of the United Kingdom, residing at 23 Fletcher Street, Roslindale, MA 02131), ASSIGNORS, are the inventors of the invention in **NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES** for which we have executed an application for a Patent of the United States

- ☐ which is executed on ☐ even date herewith or ☐ _____
☒ which is identified by Pennie & Edmonds LLP docket no. 7853-226-999
☒ which was filed on March 1, 2001, Application No. 09/796,858

and WHEREAS, Millennium Pharmaceuticals, Inc., ASSIGNEE is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date _____, 2001 DOUGLAS A. HOLTZMAN L.S.

State of _____)
 County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **DOUGLAS A. HOLTZMAN**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 JOHN D. SHARP L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **JOHN D. SHARP**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 KEVIN R. LEIBY L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **KEVIN R. LEIBY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 STEVEN BOSSONE L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **STEVEN BOSSONE**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date 11/16/01, 2001 Yang Pan L.S.
YANG PAN
Date 11/16/01, 2001 Yang Pan
Witnessed by
Date 11/16/01, 2001 W. G. 2
Witnessed by

Date _____, 2001 _____ L.S.
THOMAS M. BARNES

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **THOMAS M. BARNES**, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
CHRISTOPHER C. FRASER

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **CHRISTOPHER C. FRASER**, personally known to me on the basis of satisfactory evidence to be the
person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
NICHOLAS WRIGHTON

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **NICHOLAS WRIGHTON**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
PAUL S. MYERS

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **PAUL S. MYERS**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
GILLIAN KINGSBURY

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **GILLIAN KINGSBURY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

ASSIGNMENT

WHEREAS, WE, **Douglas A. Holtzman** (a citizen of the United States, residing at 821 Centre Street, #6, Jamaica Plain, MA 02130); **John D. Sharp** (a citizen of the United States, residing at 245 Park Avenue, Arlington, MA 02476); **Kevin R. Leiby** (a citizen of the United States, residing at 4 Showhegan Way, Natick, MA 01760); **Steven Bossone** (a citizen of the United States, residing at 91 Bacon Street, Winchester, MA 01890); **Yang Pan** (a citizen of the People's Republic of China, residing 5308 135th Place SE, Bellevue, WA 98006); **Thomas M. Barnes** (a citizen of Australia, residing at 22 Hanson St. #2, Boston, MA 02118); **Christopher C. Fraser** (a citizen of the United States, residing at 52 Grassland Street, Lexington, MA 02421); **Nicholas Wrighton** (a citizen of the United Kingdom, residing at 18 Lloyd Street, Winchester, MA 01890); **Paul S. Myers** (a citizen of the United States, residing at 171 South Street, Unit 17A, Jamaica Plain, MA 02130); and **Gillian Kingsbury** (a citizen of the United Kingdom, residing at 23 Fletcher Street, Roslindale, MA 02131), ASSIGNORS, are the inventors of the invention in **NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES** for which we have executed an application for a Patent of the United States

12 Mason Ter.
T.B. 10/26/01

- ☐ which is executed on ☐ even date herewith or ☐ _____
☒ which is identified by Pennie & Edmonds LLP docket no. 7853-226-999
☒ which was filed on **March 1, 2001**, Application No. 09/796,858

and WHEREAS, Millennium Pharmaceuticals, Inc., ASSIGNEE is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date _____, 2001 _____ L.S.
DOUGLAS A. HOLTZMAN

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **DOUGLAS A. HOLTZMAN**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 JOHN D. SHARP L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **JOHN D. SHARP**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 KEVIN R. LEIBY L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **KEVIN R. LEIBY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 STEVEN BOSSONE L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **STEVEN BOSSONE**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001, YANG PAN L.S.

Date _____, 2001, _____
Witnessed by _____

Date _____, 2001, _____
Witnessed by _____

Date 10-29, 2001, Thomas M Barnes L.S.
THOMAS M. BARNES

State of Massachusetts
County of Middlesex SS.:

On October 29, 2001, before me, Simonne Corriveau, Notary Public, personally appeared **THOMAS M. BARNES**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Simonne Corriveau
My Commission expires: 9/1/2006

Date _____, 2001, _____ L.S.
CHRISTOPHER C. FRASER

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **CHRISTOPHER C. FRASER**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.

NICHOLAS WRIGHTON

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **NICHOLAS WRIGHTON**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.

PAUL S. MYERS

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **PAUL S. MYERS**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.

GILLIAN KINGSBURY

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **GILLIAN KINGSBURY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

ASSIGNMENT

Chris for Oct 29, 2001

WHEREAS, WE, **Douglas A. Holtzman** (a citizen of the United States, residing at 821 Centre Street, #6, Jamaica Plain, MA 02130); **John D. Sharp** (a citizen of the United States, residing at 245 Park Avenue, Arlington, MA 02476); **Kevin R. Leiby** (a citizen of the United States, residing at 4 Showhegan Way, Natick, MA 01760); **Steven Bossone** (a citizen of the United States, residing at 91 Bacon Street, Winchester, MA 01890); **Yang Pan** (a citizen of the People's Republic of China, residing 5308 135th Place SE, Bellevue, WA 98006); **Thomas M. Barnes** (a citizen of Australia, residing at 22 Hanson St. #2, Boston, MA 02118); **Christopher C. Fraser** (a citizen of the United States, residing at ~~51 Cabot Street~~ 51 Cabot Street, Lexington, MA 02421); **Nicholas Wrighton** (a citizen of the United Kingdom, residing at 18 Lloyd Street, Winchester, MA 01890); **Paul S. Myers** (a citizen of the United States, residing at 171 South Street, Unit 17A, Jamaica Plain, MA 02130); and **Gillian Kingsbury** (a citizen of the United Kingdom, residing at 23 Fletcher Street, Roslindale, MA 02131), ASSIGNORS, are the inventors of the invention in **NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES** for which we have executed an application for a Patent of the United States

- ☐ which is executed on ☐ even date herewith or ☐ _____
☒ which is identified by Pennie & Edmonds LLP docket no. 7853-226-999
☒ which was filed on **March 1, 2001**, Application No. 09/796,858

and WHEREAS, Millennium Pharmaceuticals, Inc., ASSIGNEE is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date _____, 2001 DOUGLAS A. HOLTZMAN L.S.

State of _____)
 County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **DOUGLAS A. HOLTZMAN**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 JOHN D. SHARP L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **JOHN D. SHARP**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 KEVIN R. LEIBY L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **KEVIN R. LEIBY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 STEVEN BOSSONE L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **STEVEN BOSSONE**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 YANG PAN L.S.

Date _____, 2001 _____
Witnessed by

Date _____, 2001 _____
Witnessed by

Date _____, 2001 THOMAS M. BARNES L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **THOMAS M. BARNES**, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

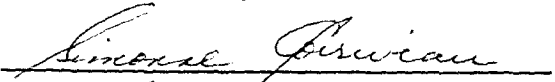
WITNESS my hand and official seal

Date Oct 29, 2001, 2001  L.S.
CHRISTOPHER C. FRASER

State of Massachusetts
County of Middlesex SS.:

On Oct. 29, 2001, before me, Simone Corriveau, Notary Public,
personally appeared **CHRISTOPHER C. FRASER**, personally known to me on the basis of satisfactory evidence to be the
person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal



My Commission expires: 9/1/2006

Date _____, 2001 _____ L.S.
NICHOLAS WRIGHTON

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **NICHOLAS WRIGHTON**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
PAUL S. MYERS

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **PAUL S. MYERS**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
GILLIAN KINGSBURY

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **GILLIAN KINGSBURY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

ASSIGNMENT

WHEREAS, WE, **Douglas A. Holtzman** (a citizen of the United States, residing at 821 Centre Street, #6, Jamaica Plain, MA 02130); **John D. Sharp** (a citizen of the United States, residing at 245 Park Avenue, Arlington, MA 02476); **Kevin R. Leiby** (a citizen of the United States, residing at 4 Showhegan Way, Natick, MA 01760); **Steven Bossone** (a citizen of the United States, residing at 91 Bacon Street, Winchester, MA 01890); **Yang Pan** (a citizen of the People's Republic of China, residing 5308 135th Place SE, Bellevue, WA 98006); **Thomas M. Barnes** (a citizen of Australia, residing at 22 Hanson St. #2, Boston, MA 02118); **Christopher C. Fraser** (a citizen of the United States, residing at 52 Grassland Street, Lexington, MA 02421); **Nicholas Wrighton** (a citizen of the United Kingdom, residing at 18 Lloyd Street, Winchester, MA 01890); **Paul S. Myers** (a citizen of the United States, residing at 171 South Street, Unit 17A, Jamaica Plain, MA 02130); and **Gillian Kingsbury** (a citizen of the United Kingdom, residing at 23 Fletcher Street, Roslindale, MA 02131), ASSIGNORS, are the inventors of the invention in **NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES** for which we have executed an application for a Patent of the United States

- ☐ which is executed on ☐ even date herewith or ☐ _____
☒ which is identified by Pennie & Edmonds LLP docket no. 7853-226-999
☒ which was filed on **March 1, 2001**, Application No. **09/796,858**

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AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date _____, 2001 DOUGLAS A. HOLTZMAN L.S.

State of _____)
 County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **DOUGLAS A. HOLTZMAN**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 JOHN D. SHARP L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **JOHN D. SHARP**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 KEVIN R. LEIBY L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **KEVIN R. LEIBY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 STEVEN BOSSONE L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **STEVEN BOSSONE**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
YANG PAN

Date _____, 2001 _____
Witnessed by

Date _____, 2001 _____
Witnessed by

Date _____, 2001 _____ L.S.
THOMAS M. BARNES

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **THOMAS M. BARNES**, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
CHRISTOPHER C. FRASER

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **CHRISTOPHER C. FRASER**, personally known to me on the basis of satisfactory evidence to be the
person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date 10/30/01, 2001 Nicholas Wrighton L.S.
NICHOLAS WRIGHTON

State of Mass.)
County of Norfolk) SS.:

On Oct 30, 2001, before me, Nicholas Wrighton, Notary Public, personally appeared **NICHOLAS WRIGHTON**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Gene M. Bagley

Date _____, 2001 PAUL S. MYERS L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **PAUL S. MYERS**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 GILLIAN KINGSBURY L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **GILLIAN KINGSBURY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

ASSIGNMENT

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- ☐ which is executed on ☐ even date herewith or ☐ _____
☒ which is identified by Pennie & Edmonds LLP docket no. 7853-226-999
☒ which was filed on **March 1, 2001**, Application No. 09/796,858

and WHEREAS, Millennium Pharmaceuticals, Inc., ASSIGNEE is desirous of obtaining our entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

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AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date _____, 2001 DOUGLAS A. HOLTZMAN L.S.

State of _____)
 County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **DOUGLAS A. HOLTZMAN**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 JOHN D. SHARP L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **JOHN D. SHARP**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 KEVIN R. LEIBY L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **KEVIN R. LEIBY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 STEVEN BOSSONE L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **STEVEN BOSSONE**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 YANG PAN L.S.

Date _____, 2001 _____
Witnessed by _____

Date _____, 2001 _____
Witnessed by _____

Date _____, 2001 THOMAS M. BARNES L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **THOMAS M. BARNES**, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 CHRISTOPHER C. FRASER L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **CHRISTOPHER C. FRASER**, personally known to me on the basis of satisfactory evidence to be the
person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 NICHOLAS WRIGHTON L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **NICHOLAS WRIGHTON**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

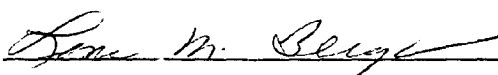
WITNESS my hand and official seal

Date 10/30/01, 2001  L.S.
PAUL S. MYERS

State of Mass)
County of Norfolk) SS.:

On Oct 30, 2001, before me, Paul Myers, Notary Public, personally appeared **PAUL S. MYERS**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal



Date _____, 2001 GILLIAN KINGSBURY L.S.

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **GILLIAN KINGSBURY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

ASSIGNMENT

WHEREAS, WE, **Douglas A. Holtzman** (a citizen of the United States, residing at 821 Centre Street, #6, Jamaica Plain, MA 02130); **John D. Sharp** (a citizen of the United States, residing at 245 Park Avenue, Arlington, MA 02476); **Kevin R. Leiby** (a citizen of the United States, residing at 4 Showhegan Way, Natick, MA 01760); **Steven Bossone** (a citizen of the United States, residing at 91 Bacon Street, Winchester, MA 01890); **Yang Pan** (a citizen of the People's Republic of China, residing 5308 135th Place SE, Bellevue, WA 98006); **Thomas M. Barnes** (a citizen of Australia, residing at 22 Hanson St. #2, Boston, MA 02118); **Christopher C. Fraser** (a citizen of the United States, residing at 52 Grassland Street, Lexington, MA 02421); **Nicholas Wrighton** (a citizen of the United Kingdom, residing at 18 Lloyd Street, Winchester, MA 01890); **Paul S. Myers** (a citizen of the United States, residing at 171 South Street, Unit 17A, Jamaica Plain, MA 02130); and **Gillian Kingsbury** (a citizen of the United Kingdom, residing at ~~23 Fletcher Street, Roslindale, MA 02131~~), ASSIGNORS, are the inventors of the invention in NOVEL GENES ENCODING PROTEINS HAVING PROGNOSTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC, AND OTHER USES for which we have executed an application for a Patent of the United States

- ☐ which is executed on ☐ even date herewith or ☐ 2 Vogel St. W. Roxbury MA 02132
☒ which is identified by Pennie & Edmonds LLP docket no. 7853-226-999
☒ which was filed on March 1, 2001, Application No. 09/796,858

11/06/01

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AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date _____, 2001 _____ L.S.
DOUGLAS A. HOLTZMAN

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared DOUGLAS A. HOLTZMAN, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 JOHN D. SHARP L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **JOHN D. SHARP**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 KEVIN R. LEIBY L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **KEVIN R. LEIBY**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 STEVEN BOSSONE L.S.

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public, personally appeared **STEVEN BOSSONE**, personally known to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
YANG PAN

Date _____, 2001 _____
Witnessed by _____

Date _____, 2001 _____
Witnessed by _____

Date _____, 2001 _____ L.S.
THOMAS M. BARNES

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **THOMAS M. BARNES**, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
CHRISTOPHER C. FRASER

State of _____)
County of _____ } SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared **CHRISTOPHER C. FRASER**, personally known to me on the basis of satisfactory evidence to be the
person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
NICHOLAS WRIGHTON

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared NICHOLAS WRIGHTON, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Date _____, 2001 _____ L.S.
PAUL S. MYERS

State of _____)
County of _____) SS.:

On _____, 2001, before me, _____, Notary Public,
personally appeared PAUL S. MYERS, personally known to me on the basis of satisfactory evidence to be the person whose
name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and
that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

Date 11/06/01, 2001 Gillian Kingsbury L.S.
GILLIAN KINGSBURY

State of Massachusetts
County of Middlesex SS.:

On 11/6, 2001, before me, Linorae Perrean, Notary Public,
personally appeared GILLIAN KINGSBURY, personally known to me on the basis of satisfactory evidence to be the person
whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized
capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed
the instrument.

WITNESS my hand and official seal

Linorae Perrean
My Commission expires 9/1/2006