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Correction of PTO Error	U.S. Government						
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Conveying Party(ies)	k if additional names of conveying parties attached						
	Execution Date Month Day Year						
Name Hidde L. Ploegh	03/12/1999						
Name Paula R. Bryant (f/k/a Paula R. Wolf)V	Volf 03/16/1999						
Name Matthew S. Bogyo	02/22/1999						
Name	/ /						
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Receiving Party	Mark if additional names of receiving parties attached						
Name (line 1) Massachusetts Institute of Technology	/ If document to be recorded						
Name (line 2) 77 Massachusetts Avenue	is an assignment and the receiving party is not						
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PATENT

REEL: 013723 FRAME: 0180

Page 2 PATENT				
Correspondent Name and Address Area Code and Telephone Number 617-248-7795				
Name Patent Administrator				
Address (line 1) Testa, Hurwitz & Thibeault, LLP				
Address (line 2) High Street Tower				
Address (line 3) 125 High Street				
Address (line 4) Boston, MA 02110				
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Application Number(s) or Patent Number(s)				
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has not been assigned. PCT PCT PCT				
Number of Properties Enter the total number of properties involved. # 1				
Fee Amount for Properties Listed (37 CFR 3.41): \$ 40.00				
Method of Payment: Enclosed ⊠ Deposit Account □				
Deposit Account (Enter for payment by deposit account or if additional fees can be charged to the account)				
Deposit Account Number # 20-0531				
Authorization to charge additional fees: Yes 🔀 No 🗌 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. Charges to deposit account are authorized, as indicated herein.				
Diana M. Steel, Reg. No. 43,153				
Name of Person Signing Name of Person Signing Name of Person Signing Name of Person Signing Name of Person Signing				

2565697_1

ASSIGNMENT

WHEREAS, We, Hidde L. Ploegh, Paula R. Wolf, and Matthew S. Bogyo have co-invented, along with Harold A. Chapman and Richard J. Riese, one or more inventions in:

SUPPRESSION OF IMMUNE RESPONSE VIA INHIBITION OF CATHEPSIN S

described in an application (or provisional application) for Letters Patent of the United States:

identified by Attorney Docket No., and/or executed by us of even date herewith and about to be filed in the United States Patent Office;

Serial No. 09/155,956 filed in the United States Patent Office on October 8, 1998; and

WHEREAS, the Massachusetts Institute of Technology (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139 desires to acquire an interest therein, in accordance with agreements duly entered into with us;

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

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

Joint Assignment Page 2

or its attorneys or agents to insert the correct serial number and filing date into this assignment, if none is indicated on that date of our execution of this assignment;

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

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

	•		
	Inven	tor: Hidde L. Ploegh	
Commonwealth of Massachuset County of	ts)) ss		
Subscribed and sworn to b	before me, by the above-	named this	day of
	Notary P My Com	ublic mission Expires:	
	Inven	tor: Paula R. Wolf	
Commonwealth of Massachuset County of	ets)) ss		
Subscribed and sworn to	before me, by the above-	named this	day of
	Notary P My Com	ublic mission Expires:	

Inventor:

State of CALIFORNIA County of SAT FRANCISCO) ss

Subscribed and sworn to before me, by the above-named FEBUARY, 1999.

this 22 day of

My Commission Expires:

MARIO CARMONA JR Comm. # 1100914

NOTARY PUBLIC - CALIFORNIA
City & County of San Francisco
My Comm. Expires June 14, 2000

506MAB5473/85.709881-1

WHEREAS, We, Hidde L. Ploegh, Paula R. Wolf, and Matthew S. Bogyo have co-invented, along with Harold A. Chapman and Richard J. Riese, one or more inventions in:

SUPPRESSION OF IMMUNE RESPONSE VIA INHIBITION OF CATHEPSIN S

, and/or executed by us of even date herewith identified by Attorney Docket No. and about to be filed in the United States Patent Office;

described in an application (or provisional application) for Letters Patent of the United States:

Serial No. 09/155,956 filed in the United States Patent Office on October 8, 1998; and \boxtimes

WHEREAS, the Massachusetts Institute of Technology (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139 desires to acquire an interest therein, in accordance with agreements duly entered into with us;

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

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

Joint Assignment Page 2

or its attorneys or agents to insert the correct serial number and filing date into this assignment, if none is indicated on that date of our execution of this assignment;

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

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

	Inventor: Hidde L. Ploegh
Commonwealth of Massachusetts County of Soffork)) ss
Subscribed and sworn to before n healt, 1999.	re me, by the above-named this 12 14 day of
	Notary Public My Commission Expires: PAULINE A. BERGERON NOTARY PUBLIC My commission exp. Sept. 29, 2000
	Inventor: Paulo R. Bujant. Paula R. Walf Bryant
Commonwealth of Massachusetts County of Soffice)) ss
Subscribed and sworn to befo	Notary Public My Commission Expires: NOTARY PUBLIC:

PATENT REEL: 013723 FRAME: 0186

My commission exp. Sept. 29, 2000

Joint Assignment Page 3

	Inventor:		
		Matthew S. Bogyo	
State of County of)) ss		
·	sworn to before me, by the above-named , 19	this	day of
	Notary Public		
	My Commission	n Expires:	

506MAB5473/85.709881-1

RECORDED: 02/05/2003