

## PATENT ASSIGNMENT

Electronic Version v1.1  
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT						
NATURE OF CONVEYANCE:	ASSIGNMENT						
CONVEYING PARTY DATA							
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Chengcheng Zhang</td> <td>12/29/2005</td> </tr> <tr> <td>Harvey Lodish</td> <td>12/29/2005</td> </tr> </tbody> </table>		Name	Execution Date	Chengcheng Zhang	12/29/2005	Harvey Lodish	12/29/2005
Name	Execution Date						
Chengcheng Zhang	12/29/2005						
Harvey Lodish	12/29/2005						
RECEIVING PARTY DATA							
Name:	Whitehead Institute for Biomedical Research						
Street Address:	Nine Cambridge Center						
City:	Cambridge						
State/Country:	MASSACHUSETTS						
Postal Code:	02142						
PROPERTY NUMBERS Total: 1							
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>12830709</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	12830709		
Property Type	Number						
Application Number:	12830709						
CORRESPONDENCE DATA							
Fax Number:	6172798435						
Phone:	6173106000						
Email:	bosipmail@gtlaw.com						
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>							
Correspondent Name:	Jennifer A. Camacho						
Address Line 1:	Greenberg Traurig, LLP						
Address Line 2:	One International Place						
Address Line 4:	Boston, MASSACHUSETTS 02110						
ATTORNEY DOCKET NUMBER:	130075-010204/US						
NAME OF SUBMITTER:	Jennifer A. Camacho						
Total Attachments: 2 source=010204Assignment#page1.tif source=010204Assignment#page2.tif							

CH \$40.00 12830709

**ASSIGNMENT**

WHEREAS, We, Chengcheng Zhang and Harvey Lodish have invented one or more inventions described in an application (or provisional application) for Letters Patent of the United States entitled:

**CULTURED HEMATOPOIETIC STEM CELLS AND METHOD FOR EXPANSION AND ANALYSIS THEREOF**

and identified by

☐ Attorney Docket No. WHI-001, and/or executed by us on even date herewith and about to be filed in the United States Patent Office;

☒ Serial No. 11/255,191 filed in the United States Patent Office on October 20, 2005; and

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

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, our entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the invention(s) 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 United States law or international convention, including but not limited to non-provisionals, continuations, divisionals, reissues, reexaminations, extensions, and substitutions of said application or such Letters Patent, and any right, title and interest we may have in provisional applications to which said application claims priority; said invention(s), 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 United States laws and international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent, including but not limited to any cause(s) of action and damages accruing prior to this assignment. We hereby acknowledge that this assignment, being of our entire right, title and interest in and to said invention(s), 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(s) to said ASSIGNEE, its successors, assigns, and legal representatives, but at its or their expense and charges, including the execution of non-provisional, substitution, continuation, divisional, reissue, reexamination, or corresponding foreign or international patent applications;

AND, we hereby further agree to provide statements or testimony in any interference or other proceeding in which said invention(s) or any application or patent directed thereto may be involved;

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

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

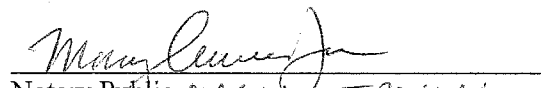
**IN TESTIMONY WHEREOF**, we have hereunto set our hands-and affixed our seals on the date(s) set forth below.

Inventor:

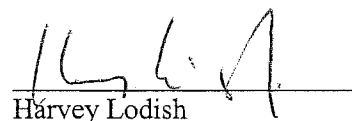
  
Chengcheng Zhang

State/Commonwealth of ) MASSACHUSETTS  
County of ) ss  
Middlesex

On this 29<sup>th</sup> day of December, 2005, before me, the undersigned notary public, personally appeared Chengcheng Zhang, proved to me through satisfactory evidence of identification, which were Personally known, to be the person whose name is signed on the preceding or attached document in my presence.

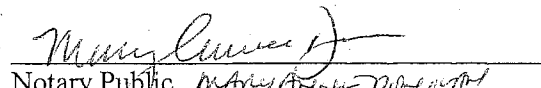
  
Notary Public MARY ANNE DONOVAN  
My Commission Expires: MAY 30, 2008

Inventor:

  
Harvey Lodish

State/Commonwealth of ) MASSACHUSETTS  
County of ) ss  
Middlesex

On this 29<sup>th</sup> day of December, 2005, before me, the undersigned notary public, personally appeared Harvey Lodish, proved to me through satisfactory evidence of identification, which were Personally known, to be the person whose name is signed on the preceding or attached document in my presence.

  
Notary Public MARY ANNE DONOVAN  
My Commission Expires: MAY 30, 2008