



Date of Deposit: August 13, 2003

Attorney Docket No. 20363-014

<div style="float: left; width: 20%; font-size: 1.5em; font-family: cursive;">4-1303</div> <div style="float: right; width: 20%; font-size: 1.2em;">08-18-2003</div> <div style="clear: both;"></div> <div style="text-align: center;"> <b>102526820</b></div> <div style="text-align: right; font-size: 0.8em;">U.S. DEPARTMENT OF COMMERCE Patent and Trademark Office</div>	
Please record the attached original documents or copy thereof.	
<b>1. Name of conveying party(ies) (date executed):</b>  Howard Hughes Medical Institute (March 6, 2003)  Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  <b>3. Nature of conveyance:</b> <div style="display: flex; justify-content: space-between;"><div><input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Security Agreement <input type="checkbox"/> Other _____</div><div><input type="checkbox"/> Merger <input type="checkbox"/> Change of Name</div></div>	<b>2. Name and address of receiving party(ies)</b>  Name: Dana Farber Cancer Institute  Internal Address:  Street Address: 44 Binney Street Boston, MA 02115  Additional name(s) & address(es) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>4. Application number(s) or patent number(s):</b> If this document is being filed together with a new application, the execution date of the application is _____ <div style="display: flex; justify-content: space-between;"><div style="width: 45%;"><b>A. Patent Application No(s):</b> 10/101,812 filed March 19, 2002 _____</div><div style="width: 45%;"><b>B. Patent No(s):</b>   Additional numbers attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</div></div>	
<b>5. Name and address of party to whom correspondence Concerning document should be mailed:</b>  Name: Ivor R. Elrifi Address: MINTZ, LEVIN, COHN, FERRIS GLOVSKY and POPEO, P.C. One Financial Center Boston, MA 02111	<b>6. Total number of applications and patents involved:</b> [ 1 ]  <b>7. Total fee (37 CFR 3.41)</b> \$40.00 <div><input checked="" type="checkbox"/> Enclosed <input type="checkbox"/> The Commissioner is authorized to charge Deposit Account No: 50-0311, Reference No. 20363-014</div>
DO NOT USE THIS SPACE	
<b>8. Statement and signature</b> <i>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.</i> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 10px;"><div style="width: 30%;">Cynthia A. Kozakiewicz, Reg. No. 42,764</div><div style="width: 30%; text-align: center;"> _____ Signature</div><div style="width: 30%; text-align: right;">August 13, 2003 _____ Date</div></div> <div style="margin-top: 10px;">Name of Person Signing _____ Total number of pages including cover sheet, attachments, and document: [5]</div>	

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Mail documents to be recorded with required cover sheet information to:

Mail Stop ASSIGNMENT  
Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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## **ASSIGNMENT**

**Howard Hughes Medical Institute**, existing under the Laws of the State of Delaware, with offices at 400 Jones Bridge Road, Chevy Chase, Maryland 20814, the undersigned, hereinafter referred to as **HHMI** or the **ASSIGNOR**, for good and valuable consideration, the receipt of which is hereby acknowledged, hereby assigns, sells and transfers to **Dana Farber Cancer Institute, Inc.**, a non-profit organization, with offices at **44 Binney Street, Boston, MA 02115** and its successors, assigns and legal representatives, all hereinafter referred to as the **ASSIGNEE**: (1) its entire right, title and interest for the United States and in all countries, in and to any and all inventions, discoveries and applications which are disclosed in the application for United States Letters Patent entitled:

### **PHARMACEUTICALS AND METHODS FOR TREATING HYPOXIA AND SCREENING METHODS THEREFOR**

filed with the U.S. Patent and Trademark Office on **March 19, 2002** and assigned Serial No. **10/101,812**, including any renewals, revivals, reissues, reexaminations, extensions, continuations and divisions thereof and any substitute applications therefor; (2) the full and complete right to file patent applications in the name of the **ASSIGNEE**, its designee, or in its name as the **ASSIGNEE**, or its designee's election, on the aforesaid inventions, discoveries and applications in all countries of the world; (3) the entire right, title and interest in and to any Letters Patent which may issue thereon in the United States or in any country, and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and (4) the entire right, title and interest in all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the above inventions, discoveries and applications.

**HHMI** hereby authorizes and requests the competent authorities to grant and to issue any and all such Letters Patent in the United States and throughout the world to the **ASSIGNEE** of the entire right, title and interest therein, as fully and entirely as the same would have been held and enjoyed by **HHMI** had this assignment, sale and transfer not been made.

**HHMI** agrees, at any time, upon the request of the **ASSIGNEE**, to execute and to deliver to the **ASSIGNEE** any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents of confirmation, registration and importation based on any Letters Patent issuing on said inventions, discoveries, or applications and divisions, continuations, renewals, revivals, reissues, reexaminations and extensions thereof.

**HHMI** further agrees at any time to execute and to deliver upon request of the **ASSIGNEE** such additional documents, if any, as are necessary or desirable to secure patent protection on said inventions, discoveries and applications throughout all countries of the world, and otherwise to do the necessary to give full effect to and to perfect the rights of the **ASSIGNEE** under this Assignment, including the execution, delivery and procurement of any and all further documents evidencing this assignment, transfer and sale as may be necessary or desirable.

HHMI hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

HHMI further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.



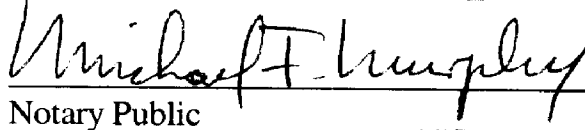
Date 3/6/03

**Signature of:** William G. Kaelin, Jr., for himself and  
as an agent for Howard Hughes Medical Institute

State of Massachusetts

Country of Suffolk

Subscribed and sworn to before me this 6 day of March 2003.

  
Notary Public

My commission expires MICHAEL F MURPHY  
MY COMMISSION EXPIRES  
SEPT. 13, 2007

TRA 1718089v1

APPOINTMENT OF INVESTIGATOR AS AGENT

Appointment by the Howard Hughes Medical Institute (the "Institute") of William G. Kaelin Jr., MD, an investigator employed by the Institute, as its agent for the purpose of assigning certain rights to Dana-Farber Cancer Institute, Inc. ("Dana-Farber").

WHEREAS, the Institute and Dana-Farber collaborate in the active conduct of medical research pursuant to an Agreement between them dated as of February 1, 1998 (the "Agreement");

WHEREAS, pursuant to the Agreement, the Institute has agreed to assign to Dana-Farber the Institute's rights with respect to inventions, discoveries, improvements, and other intellectual property, whether patentable or copyrightable (each a "Subject Property"), conceived or reduced to practice in the course of the research program conducted under the Agreement by employees of the Institute;

WHEREAS, research conducted pursuant to the Agreement by William G. Kaelin Jr., MD while employed by the Institute at Dana-Farber has resulted in the invention of a certain Subject Property entitled "Method For Non-Invasive Monitoring of Cyclin/Cdk Activity in Living Cells," which is the subject of a patent application entitled "Pharmaceuticals and Methods for Treating Hypoxia and Screening Methods Thereof" filed in the U.S. Patent and Trademark Office on March 19, 2002 with Serial Number 10/101,812, and the Invention is a Subject Property; and

WHEREAS, the Institute wishes William G. Kaelin Jr., MD to act as its agent for the purpose of assigning to Dana-Farber the rights the Institute has in the Invention by reason of the research program conducted at Dana-Farber,

NOW THEREFORE, the Institute hereby appoints William G. Kaelin Jr., MD as its agent for the purpose of assigning the rights the Institute has in the Invention by reason of the research program conducted at Dana-Farber to Dana-Farber in accordance with and subject to the conditions of the Agreement.

Executed November 11, 2002

HOWARD HUGHES MEDICAL INSTITUTE

By: David A. Clayton  
David A. Clayton, PhD  
Vice President and Chief Scientific Officer

ATTESTED:

Joan S. Leonard  
Joan S. Leonard, Esq.  
Vice President and General Counsel

DFCI 746  
HHMI 02073

RECORDED: 08/13/2003

PATENT  
REEL: 014378 FRAME: 0358