| Form PTO-1595 (Rev. 07/05) OMB No. 0651-0027 (exp. 6/30/2008) 04 - 04 | -2007 U.S. DEPARTMENT OF COMMERCE United States Patent and Trademark Office | |
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| To the Director of the U.S. Patent at 10339 | ocuments or the new address(es) below. | |
| 1. Name of conveying party(ies) | 2. Name and address of receiving party(ies) | |
| 1. Ekambar R. Kandimalla 2. Qiuyan Zhao | Name: Idera Pharmaceuticals, Inc. | |
| 3. Dong Yu 4. Sudhir Agrawal | Internal Address: | |
| Additional name(s) of conveying party(ies) attached? Yes V | | |
| 3. Nature of conveyance/Execution Date(s): | Street Address: 345 Vassar Street | |
| Execution Date(s) 3/15/07; 3/22/07; 3/15/07; 3/15/07 | | |
| Assignment Merger | | |
| Security Agreement Change of Name | City: Cambridge | |
| Joint Research Agreement | State: MA | |
| Government Interest Assignment | | |
| Executive Order 9424, Confirmatory License | Country: USA Zip: 02139 | |
| Other | Additional name(s) & address(es) attached? TYes: Ves: No | |
| 4. Application or patent number(s): A. Patent Application No.(s) 11/637,184 | document is being filed together with a new application. B. Patent No.(s) | |
| Additional numbers at | tached? Yes No | |
| 5. Name and address to whom correspondence concerning document should be mailed: | 6. Total number of applications and patents involved: 1 | |
| Name: Keown & Zucchero, LLP | 7. Total fee (37 CFR 1.21(h) & 3.41) \$40.00 | |
| Internal Address: Suite 1200 | Authorized to be charged by credit card | |
| | Authorized to be charged to deposit account | |
| Street Address: 500 West Cummings Park | Enclosed | |
| Ottoot / Iddi Coo. Doo Frost Callinnings Falk | None required (government interest not affecting title) | |
| City: Woburn | 8. Payment Information | |
| State: MA Zip:01801 | a. Credit Card Last 4 Numbers Expiration Date | |
| Phone Number: 781-938-1805 | Expiration Date | |
| Fax Number: 781-938-4777 | b. Deposit Account Number 502285 | |
| Email Address: <u>jzucchero@keownlaw.com</u> | Authorized User Name Keown & Zucchero | |
| 9. Signature: | 4 | |
| - Col C-pure | March 29 2007 \(\overline{2} \) | |
| Signature | Date 🕏 | |
| Joseph C. Zucchero, Reg. No. 55762 Name of Person Signing | Total number of pages including cover sheet, attachments, and documents: | |
| Documents to be recorded (including cover shee | | |

Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

ASSIGNMENT

WHEREAS we, Ekambar R. Kandimalla, being a citizen of The United States of America and residing at 6 Candlewood Lane, Southboro, MA 01772; Qiuyan Zhao, being a citizen of The United States of America and residing at 11 Southwood Drive, Southboro, MA 01772; Dong Yu, being a citizen of China and residing at 25 Indian Pond Road, Westboro, MA 01581 and Sudhir Agrawal, being a citizen of The United States of America and residing at 61 Lamplighter Drive, Shrewsbury, MA 01545, are inventors of certain new and useful inventions and discoveries, for which we have made an application for Letters Patent entitled MODULATION OF

IMMUNOSTIMULATORY ACTIVITY OF IMMUNOSTIMULATORY
OLIGONUCLEOTIDE ANALOGS BY POSITIONAL CHEMICAL CHANGES,
which application was filed in the United States Patent and Trademark Office on

December 12, 2006, and assigned Serial No. 11/637,184; and

WHEREAS Idera Pharmaceuticals, Inc., a corporation existing under the laws of Delaware, whose address is 345 Vassar Street, Cambridge, MA 02139, which together with its successors and assigns is hereinafter called "ASSIGNEE," is desirous of acquiring the title, rights, benefits, and privileges hereinafter recited;

NOW THEREFORE, for and in consideration of good and valuable consideration furnished by ASSIGNEE to us, receipt and sufficiency of which we hereby acknowledge, we hereby, without reservations:

1. Assign, transfer and convey to ASSIGNEE the entire right, title and interest in and to said inventions and discoveries, said application for Letters Patent, any and all other applications for Letters Patent on said inventions and discoveries in whatsoever countries, including all divisional, renewal, substitute, continuation, continuation-in-part, and convention applications based in whole or in part upon said inventions or discoveries, or upon said applications, and any and all Letters Patent, reissues and extensions of Letters Patent granted for said inventions and discoveries or upon said applications, and every priority right that is or may be

predicated upon, or arise from, said inventions, said discoveries, said applications and said Letters Patent;

- Authorize ASSIGNEE to file patent applications in any or all countries on any or all of said inventions and discoveries in my name or in the name of ASSIGNEE or otherwise as ASSIGNEE may deem advisable, under International Conventions or otherwise;
- 3. Authorize and request the Commissioner of Patents and Trademarks of the United States of America and the empowered officials of all other governments throughout the world to issue or transfer all said Letters Patent to ASSIGNEE as ASSIGNEE of the entire right, title and interest therein or otherwise as ASSIGNEE may direct;
- 4. Warrant that we have not knowingly conveyed to others any right in said inventions, discoveries, applications or patents or any license to use the same, or to make, use or sell anything embodying or utilizing any of said inventions or discoveries; and that we have good right to assign the same to ASSIGNEE without encumbrance;
- 5. Bind my heirs, legal representatives and assigns, as well as myself, to do, upon ASSIGNEE's request and at ASSIGNEE's expense, but without additional consideration to us or them, all acts reasonably serving to assure that said inventions and discoveries, said patent applications, and said Letters Patents shall be held and enjoyed by ASSIGNEE as fully and entirely as the same could have been held and enjoyed by us, our heirs, legal representatives and assigns as if this Assignment had not been made; and particularly to execute and deliver to ASSIGNEE all lawful application documents including petitions, specifications and oaths, and all assignments, disclaimers and lawful affidavits in form and substance as may be requested by ASSIGNEE; and to communicate to ASSIGNEE all facts known to me relating to said inventions and discoveries or the history thereof, and to testify as to the same in any court or proceeding; and to furnish ASSIGNEE any and all documents, photographs, models, samples and

other physical exhibits in my control or in the control of my heirs, legal representatives or assigns which may be useful for establishing the facts of my conceptions, disclosures, and reduction to practice of said invention and discoveries.

IN TESTIMONY WHEREOF, we have hereunto set our hands and seals.

| Date: March 15, 2007 | a pour el |
|---|--------------------------------|
| | Ekambar R. Kandimalla |
| Then personally appeared before me this _ the above named Ekambar R. Kandınalıy ho acki foregoing instrument to be his free act and deed. | |
| ADRIENNE DRAGO SA Notary Public COMMONWEALTH OF MASSACHUSETTS My Commission Expires March 1, 2013 | Notary Public |
| Date: | |
| | Qiuyan Zhao |
| Then personally appeared before me this _ | , day of, 2007, |
| the above named who ackr | nowledged the execution of the |
| foregoing instrument to be his free act and deed. | |
| | |
| | Notary Public |

other physical exhibits in my control or in the control of my heirs, legal representatives or assigns which may be useful for establishing the facts of my conceptions, disclosures, and reduction to practice of said invention and discoveries.

IN TESTIMONY WHEREOF, we have hereunto set our hands and seals.

| Date: | | |
|--|-------------------------------|----------|
| | Ekambar R. Kandimalla | |
| Then personally appeared before me this | day of | _, 2007, |
| the above named who acknowledge who ackn | owledged the execution of the | : |
| foregoing instrument to be his free act and deed. | | |
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| | Notary Public | |
| | | |
| Date: March 22, 2007 | Oingo Wh | 4 |
| | Qiuyan Zhao | |
| | a and | |
| Then personally appeared before me this | day of March | _, 2007, |
| the above named Gingan thao who acknowledge | owledged the execution of the | : |
| foregoing instrument to be his free act and deed. | | |
| | Ca of | |
| A DA AURIENNE DRAGO SA | Alrene Bago | |
| Notary Public COMMONWEALTH OF MASSACHUSETTS | Notary Public | |
| My Commission Expires March 1, 2013 | | |

| Date: 3-15-07 | Mrszn | |
|---|----------------|--|
| | Dong Yu | |
| My Commission Expires | | |
| March 1, 2013 Date: 3.15.07 | Sudhir Agrawal | |
| Then personally appeared before me this | | |
| ADRIENNE DRAGO SA Notary Public COMMONWEALTH OF MASSACHUSETTE My Commission Expires March 1, 2013 | Notary Public | |

PATENT

RECORDED: 04/02/2007 REEL: 019120 FRAME: 0692