

FORM PTO-1595
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ISIS-2661

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08-19-1999



U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

To The Honorable Commissioner of Patents and Trademarks
thereof.

101120821

Original documents or copy

1. Name of conveying party(ies):
Phillip Dan Cook, Muthiah Manoharan

Additional name(s) of conveying party(ies) attached? () YES (X) NO

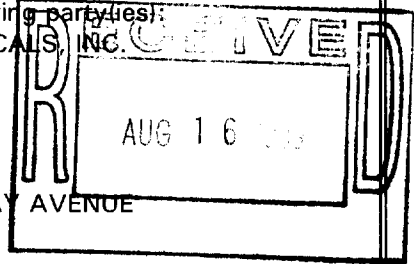
3. Nature of Conveyance:
() Assignment () Merger
() Security Agreement
() Change of Name
(X) Other: CROSS-REFERENCE ASSIGNMENT AS FILED IN PARENT CASE SERIAL NO. 08/458,396 AT REEL 8233, FRAME 0262
Execution Date: JULY 11, 1995

2. Name and address of receiving party(ies):
Name: ISIS PHARMACEUTICALS, INC.
Internal Address:

Street Address: 2292 FARADAY AVENUE

City CARLSBAD

State CALIFORNIA ZIP 92008
Additional name(s) & address attached? () YES () NO



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) 08/924,326
B. Patent No.(s)

Additional numbers attached? () YES (X) NO

5. Name and address of party to whom correspondence concerning documents should be mailed:
Name: JOSEPH LUCCI, ESQ.
Internal Address: WOODCOCK WASHBURN KURTZ MACKIEWICZ & NORRIS
One Liberty Place - 46th Floor
Philadelphia, Pennsylvania 19103-7301

Street Address: WOODCOCK WASHBURN KURTZ MACKIEWICZ & NORRIS
One Liberty Place - 46th Floor
1650 Market Street
Philadelphia, Pennsylvania 19103-7301

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41):.....\$40.00
(X) Enclosed
() Authorized to be charged to Deposit Account Number 23-3050

8. Please charge any deficiency or credit any overpayment to Deposit Account Number 23-3050

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.

JOSEPH LUCCI, REG. #33,307
Name of Person Signing/Reg. No.

Signature

August 12, 1999
Date

Total number of pages including cover sheet, attachments, and document: 4

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

08/18/1999 MTHAI1 00000348 08924326
FC:581 40.00 DP

Commissioner of Patents and Trademarks
Box Assignments
Washington, D.C. 20231

DOCKET NO.: ISIS-1992

Serial No. 08/458,396

A S S I G N M E N T

WHEREAS, we Phillip Dan Cook and Muthiah Manoharan, hereinafter referred to as the assignors, residing respectively at 641 Avilar Court, San Marcos, California 92069 and 7634 Reposada Drive, Carlsbad, California 92009 are the joint inventors of certain inventions or improvements for which we have made application for Letters Patent to the United States, identified as Serial No. 08/458,396, filed June 2, 1995, entitled Thiol-Derivatized Nucleosides and Oligonucleosides; and

WHEREAS, ISIS Pharmaceuticals, Inc. hereinafter referred to as the assignee, of 2280 Faraday Avenue, Carlsbad CA, a corporation of Delaware, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in consideration of the sum of One Dollar (\$1.00) to each of us in hand paid by said assignee, 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 to said assignee, the entire right, title and interest in and to said inventions or improvements and said application and any and all continuations, divisions and renewals of and substitutes for said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in our names applications for Letters Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by us had this assignment, sale and transfer not been made.

AND we hereby covenant 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 further covenant and agree that we will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees, or legal representatives, and each of us agrees to communicate to said assignee or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

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 on applications as aforesaid, to issue to said assignee, as assignee of the entire right, title

and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

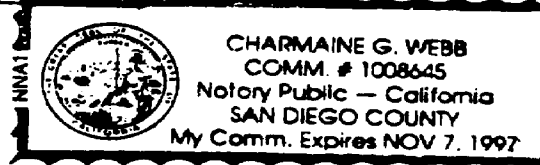
IN WITNESS WHEREOF, we have hereunto set our hands and seals.

Phillip Dan Cook (L.S.)
Phillip Dan Cook
Muthiah Manoharan (L.S.)
Muthiah Manoharan

[WHERE ALL INVENTORS SIGN BEFORE THE SAME NOTARY:]

State of California :
COUNTY OF San Diego :

SS



On this 11th day of JULY, 1995, before me personally came the above named Phillip Dan Cook, Muthiah Manoharan to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Charmaine G. Webb
Notary Public

[WHERE INVENTORS SIGN BEFORE SEPARATE NOTARIES:]

COUNTY OF _____ :

SS

On this _____ day of _____, 19__, before me personally came the above named _____ to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Notary Public

COUNTY OF _____: SS

On this _____ day of _____, 19__, before me personally came the above named _____ to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Notary Public