

FORM PTO-1595
1-31-92 ISIS-1990

09-18-1998



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Please record the attached original documents or copy

To The Honorable Commi:
thereof.

1. Name of conveying party(ies):
Vasulinga Ravikumar and Douglas L. Cole

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

3. Nature of Conveyance:
(X) Assignment () Merger
() Security Agreement
() Change of Name
() Other:

Execution Date: **Vasulinga Ravikumar - Sept. 1, 1998**
Douglas L. Cole - Sept. 3, 1998

2. Name and address of receiving party(ies):

Name: **ISIS PHARMACEUTICALS, INC.**

Street Address: **2292 Faraday Avenue**

City: **Carlsbad**

State: **California**

ZIP: **92008**

Additional name(s) & address attached? () YES (X) 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)

09/737,875 filed January 17, 1997

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: **Michael P. Straher**
Internal Address: **WOODCOCK WASHBURN KURTZ**
MACKIEWICZ & NORRIS LLP
One Liberty Place - 46th Floor
Philadelphia, Pennsylvania 19103-7301

Street Address: **WOODCOCK WASHBURN KURTZ**
MACKIEWICZ & NORRIS LLP
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

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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.

Michael P. Straher, Reg. No. 38,325

Name of Person Signing/Reg. No.

Signature

September 9, 1998

Date

Total number of pages including cover sheet, attachments, and document: 5

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

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

09/17/1998 JWA/TKL/MS 00000189 0737875 40.00 09
01 FC:561

PATENT
REEL: 9454 FRAME: 0819

PATENT
Joint Inventors

**(Pending Application;
Serial No. Known)**

DOCKET NO.: ISIS-1990

A S S I G N M E N T

WHEREAS, we **Vasulinga Ravikumar and Douglas L. Cole**, hereinafter referred to as the assignors, residing respectively at **6606 Vireo Court, Carlsbad, California 92009 and 4992 Smith Canyon Court, San Diego, California 92130** 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. **08/737,875**, filed **January 17, 1997**, entitled **SYNTHESIS OF OLIGONUCELOTIDES**; and

WHEREAS, **ISIS Pharmaceuticals, Inc.** hereinafter referred to as the assignee, of **2292 Faraday Avenue, Carlsbad, California 92008**, 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

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Joint Inventors

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.

V. Ravikumar 9/1/98 (L.S.)
Vasulinga Ravikumar
Douglas L. Cole 9/3/98 (L.S.)
Douglas L. Cole

[WHERE ALL INVENTORS SIGN BEFORE THE SAME NOTARY:]

_____: SS
COUNTY OF _____:

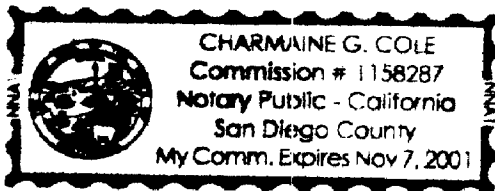
On this _____ day of _____, 1998, before me personally came the above named Vasulinga Ravikumar and Douglas L. Cole to me personally known and known to me to be the same individuals who executed the foregoing assignment, and who acknowledged to me that they executed the same of their own free will for the use and purposes therein set forth.

Notary Public

[WHERE INVENTORS SIGN BEFORE SEPARATE NOTARIES:]

State of California: SS
COUNTY OF San Diego:
1st

On this _____ day of September, 1998, before me personally came the above named Vasulinga Ravikumar 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.

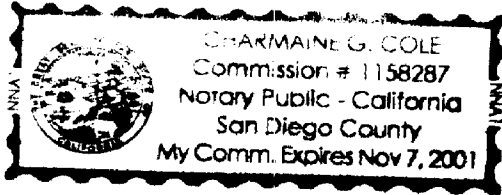


Charmaine G. Cole
Notary Public

State of California :

COUNTY OF San Diego : SS

On this 3rd day of September, 1998, before me personally came the above named Douglas L. Cole 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. Cole
Notary Public