

10-11-2001



EET

To The Honorable Commissioner of Pat

101869538

Attached original documents or copy thereof.

## 1. Name of conveying party(ies):

Muthiah Manoharan

August 18, 1999

First Assignor

Date of Execution

Second Assignor

Date of Execution

Third Assignor

Date of Execution

Fourth Assignor

Date of Execution

Fifth Assignor

Date of Execution

Sixth Assignor

Date of Execution

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

## 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) &amp; address attached? ( ) YES (X) NO

## 3. Nature of Conveyance (check only one):

( ) New Assignment

( ) Merger

( ) License Agreement

( ) Security Agreement

( ) Change of Name

( ) Other:

(X) Cross-reference of Assignment filed in United States Application No. 09/349,007, recorded on 10/15/1999 at Reel No. 010282 and Frame No. 0712

## 4. Identification of Application number(s), patent number(s) OR date of execution of application to which assignment refers:

Application Nos.:

Patent Nos.:

Date application was signed by the first named executing inventor

August 18, 1999

(Fill-in this date only if assignment is filed together with a new application)

## 5. Name and address of party to whom correspondence concerning documents should be mailed:

Name: Christine A. Goddard  
WOODCOCK WASHBURN KURTZ MACKIEWICZ & NORRIS LLP  
One Liberty Place - 46th Floor  
Philadelphia, Pennsylvania 19103-7301  
215-568-3100

## 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.

Christine A. Goddard/46,731

Name of Person Signing/Reg. No.

Signature

September 27, 2001

Date

Total number of pages including cover sheet, assignment document and additional pages attached thereto: 4

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

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

10/10/2001 TD1471 00000153 09965551

01 FC:581

40.00 DP

PATENT  
REEL: 012226 FRAME: 0991

## A S S I G N M E N T

WHEREAS, I, **Muthiah Manoharan, of Carlsbad, State of California**, have invented a certain invention entitled **CARBOHYDRATE OR 2'-MODIFIED OLIGONUCLEOTIDES HAVING ALTERNATING INTERNUCLEOSIDE LINKAGES**, for which I have made application for Letters Patent of the United States, said application having been **filed July 7, 1999 and assigned Application No. 09/349,007**; and

WHEREAS, **ISIS Pharmaceuticals, Inc.** hereinafter referred to as the assignee, of 2292 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, I, the said assignor, 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 my name 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 me had this assignment, sale and transfer not been made.

ASSIGNMENT - PAGE 1 OF 3

AND I hereby covenant that we have full right to convey the entire interest herein assigned, and that I have not executed and will not execute any agreement in conflict herewith, and I further covenant and agree that I 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 I agree 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 I 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.

ASSIGNMENT - PAGE 2 OF 3

IN WITNESS WHEREOF, I have hereunto set my hand and seal.

Dated: August 18, 1999

Muthiah Manoharan  
MUTHIAH MANOHARAN

State of California            )  
  )        ss.  
County of San Diego         )

On this 18<sup>th</sup> day of August, 1999, before me, the undersigned, a Notary Public for the state, personally appeared **MUTHIAH MANOHARAN** personally known to me/proved to me on the basis of satisfactory evidence to be the person who subscribed the foregoing Assignment and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the Assignment the person, or the entity on behalf of which the person acted, executed the Assignment.



WITNESS my hand and official seal.

Lane B.D. Schwartz  
Signature of Notary

ASSIGNMENT - PAGE 3 OF 3