

1815-1363

03-27-2002



102032518

To The Honorable Commissioner of Patents

and the attached original documents or copy thereof.

1. Name of conveying party(ies): 3-11-02

David J. Ecker 11/16/01
First Assignor Date of Execution

Richard H. Griffey 12/05/01
Second Assignor Date of Execution

Rangarajan Sampath 11/16/01
Third Assignor Date of Execution

Steven A. Hofstadler 12/20/01
Fourth Assignor Date of Execution

John McNeil 12/06/01
Fifth Assignor Date of Execution

Stanley T. Crooke 11/16/01
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) & address attached? () YES (X) NO

3. Nature of Conveyance (check only one):

(X) New Assignment () Merger
 () License Agreement () Security Agreement
 () Change of Name () Other:

() Cross-reference of Assignment filed in United States
 Application No. ___/___/___, recorded on ___ at
 Reel No. ___ and Frame No. ___

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

Application Nos.: 09/891,793 Patent Nos.: _____ Date application was signed by the first named executing inventor _____

(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: Paul K. Legaard
 WOODCOCK WASHBURN 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.

Paul K. Legaard/38,534 Paul K Legaard 28 February 2002
 Name of Person Signing/Reg. No. Signature Date

Total number of pages including cover sheet, assignment document and additional pages attached thereto: 9

Mail documents to be recorded with required cover sheet information to:
 Commissioner of Patents and Trademarks
 Box Assignments
 Washington, D.C. 20231

3/26/2002 DBYRNE 00000128 09891793
 1 FC:581 40.00 UP

A S S I G N M E N T

WHEREAS, I/we, **David J. Ecker of Encinitas, California, Richard H. Griffey of Vista, California, Rangarajan Sampath of San Diego, California, Steven A. Hofstadler of Oceanside, California, John McNeil of La Jolla, California and Stanley T. Crooke of Carlsbad, California** has/have invented a certain invention entitled **A SECONDARY STRUCTURE DEFINING DATABASE AND METHODS FOR DETERMINING IDENTITY AND GEOGRAPHIC ORIGIN OF AN UNKNOWN BIOAGENT THEREBY**, for which I/we have made an application for Letters Patent of the United States, said application having been filed **June 26, 2001** and assigned Application No. **09/891,793**; 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, 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

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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.

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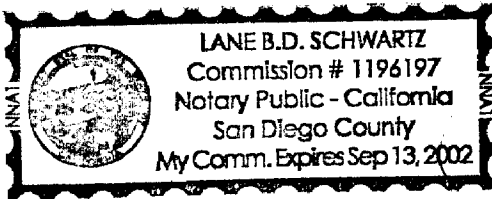
Dated: 11/16, 2001



STANLEY T. CROOKE

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

On this 16th day of NOVEMBER, 2001, before me, the undersigned, a Notary Public for the state, personally appeared **STANLEY T. CROOKE**, 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.




Signature of Notary