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S-90192

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PATENT  
REEL: 015642 FRAME: 0936

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# 6

**Application Number(s) or Patent Number(s)**

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Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).

Patent Application Number(s)

Patent Number(s)

|  |  |  |           |  |  |
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|  |  |  | 5,674,716 |  |  |
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If this document is being filed together with a new Patent Application, enter the date the patent application was

Month Day Year

**Patent Cooperation Treaty (PCT)**

Enter PCT application number only if a U.S. Application Number has not been assigned.

PCT PCT PCT  
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**Number of Properties**

Enter the total number of properties involved.

# 1

**Fee Amount**

Fee Amount for Properties Listed (37 CFR 3.41): \$ 0.00

Method of Payment:  
Deposit Account

Enclosed ☐ Deposit Account ☐

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Brenda K. Banks

Name of Person Signing

Brenda K. Banks

Signature

7/29/04

Date

08/422,147  
Pat 5,674,716

## CONFIRMATORY LICENSE

(Nonprofit Organizations or Small Business Firms)

Title : *DNA SEQUENCING*  
Inventor(s) : *Charles C. Richardson and Stanley Tabor*  
Serial No. : *422,147* Filing Date: *April 13, 1995*  
Contractor : *Harvard University*  
DOE Contract No.: *DE-FG02-88ER60688*  
DOE Case No. : *S-90,192 - Patent No. 5,674,716- Issued October 7, 1997 - Continuation  
of Serial No. 869,520 Patent No. 5,409,811*

Patent Rights Clause No.: **DEAR 952.227-71**

Foreign Applications filed in or intended to be filed at Contractor's expense in (countries):

The contractor, having the right to retain title to Subject Inventions as a result of Public Law 96-517, has reported the above-identified invention as a Subject Invention to DOE with its election to retain title thereto.

Accordingly, this document is confirmatory of the nonexclusive, nontransferable, irrevocable, paid-up license to practice or to have practiced for or on behalf of the United States, required by the Public Law and the above-identified contract, in this Subject Invention, patent application and any resulting patent, as well as any continuation, divisional, reissue, supplemental or continuation-in-part thereof, throughout the world and of all other rights acquired by the Government by the above-identified patent rights clause, a copy of which is attached hereto and incorporated by reference herein. The undersigned certifies the attached copy to be a true copy of said clause. It is understood and agreed that this license does not preclude the Government from asserting rights under the provisions of said contract or of any other agreement between the Government and the Contractor, or from asserting any other rights of the Government with respect to the above-identified Subject Invention.

The Government is hereby granted an irrevocable power to inspect and make copies of the above-identified patent application.

(SEAL)

Signed this 26 day of January, 1998  
HARVARD UNIVERSITY  
(Contractor)  
By: [Signature]  
(Contractor's Official and Title)  
Office for Technology and Innovation Licensing  
(Business Address)

**DEAR 952.227-71 PATENT RIGHTS  
SMALL BUSINESS FIRMS OR NONPROFIT  
ORGANIZATIONS (APR 1987)**

**(a) Definitions.**

(1) "Invention" means any invention or discovery which is or may be patentable or otherwise protectable under Title 35 of the United States Code (U.S.C.) or any novel variety of plant which is or may be protected under the Plant Variety Protection Act (7 U.S.C. 2321 *et seq.*).

(2) "Subject Invention" means any invention of the contractor conceived or first actually reduced to practice in the performance of work under this contract, provided that in the case of a variety of plant the date of determination (as defined in section 44(d) of the Plant Variety Protection Act, 7 U.S.C. 2401(d)) must also occur during the period of contract performance.

(3) "Practical Application" means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is utilized and that its benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms.

(4) "Made" when used in relation to any invention means the conception or first actual reduction to practice of such invention.

(5) "Small Business Firm" means a small business concern as defined at Section 2 of P.L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standard for small business concerns involved in Government procurement and subcontracting, at 13 CFR 121.3-8 and 13 CFR 121.3-12, respectively, will be used.

(6) "Nonprofit Organization" means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a state

nonprofit organization statute.

(7) "Patent Counsel" means the Department of Energy (DOE) Patent Counsel assisting the DOE contracting activity.

**(b) Allocation of principal rights.**

(1) The contractor may retain the entire right, title and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 203. With respect to any subject invention in which the contractor retains title, the Federal Government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.

(2) (Reserved.)

(c) Invention disclosure, election of title and filing of patent application by contractor.

(1) The contractor will disclose each subject invention to the Patent Counsel within two months after the inventor discloses it in writing to contractor personnel responsible for patent matters. The disclosure to the Patent Counsel shall be in the form of a written report and shall identify the contract under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding, to the extent known at the time of the disclosure of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to the Patent Counsel, the Contractor will promptly notify the Patent Counsel of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the contractor.

(2) The contractor will elect in writing whether or not to retain title to any such invention by notifying the Patent Counsel within two years of disclosure to the Patent Counsel. However, in any case where publication, on sale or public use has initiated the one year statutory period wherein valid patent protection can still be obtained in the

valid patent protection can still be obtained in the United States, the period for election of title may be shortened by Patent Counsel to a date that is no more than sixty days prior to the end of the statutory period.

(3) The contractor will file its initial patent application on a subject invention to which it elects to retain title within one year after election of title or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. The contractor will file patent applications in additional countries or international patent offices within either ten months of the corresponding initial patent application or six months from the date permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications where such filing has been prohibited by a Secrecy Order.

(4) Requests for extension of the time for disclosure to the Patent Counsel, election, and filing, under subparagraphs (1), (2) and (3) may, at the discretion of the Patent Counsel be granted.

(d) Conditions when the Government may obtain title.

The contractor will convey to the DOE, upon written request, title to any subject invention:

(1) If the contractor fails to disclose or elect title to the subject invention within the times specified in (c) above, or elects not to retain title; provided that the DOE may only request title within 60 days after learning of the failure of the contractor to disclose or elect within the specified times;

(2) In those countries in which the contractor fails to file patent applications within the time specified in (c) above; provided, however, that if the contractor has filed a patent application in a country after the time specified in (c) above, but prior to its receipt of the written request of the Patent Counsel, the contractor shall continue to retain title in that country; or

(3) In any country in which the contractor decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in a reexamination or opposition proceeding on, a patent on a subject invention.

(e) Minimum rights to contractor and protection of the contractor right to file.

(1) The contractor will retain a nonexclusive, royalty-free license throughout the world in each subject invention to which the Government obtains title except if the contractor fails to disclose the subject invention within the times specified in (c) above. The contractor's license extends to its domestic subsidiaries and affiliates, if any, within the corporate structure of which the contractor is a part and includes the right to grant sublicenses of the same scope to the extent the contractor was legally obligated to do so at the time the contract was awarded. The license is transferable only with the approval of DOE except when transferred to the successor of the part of the contractor's business to which the invention pertains.

(2) The contractor's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR 404 and 10 CFR 781. This license will not be revoked in that field of use or the geographical areas in which the contractor has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of DOE to the extent the contractor, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

(3) Before revocation or modification of the license, DOE will furnish the contractor a written notice of its intention to revoke or modify the license, and the contractor will be allowed thirty days (or such other time as may be authorized by DOE for good cause shown by the contractor) after the notice to show cause why the license should not be revoked or modified. The contractor has the right to appeal, in accordance

with 37 CFR 404 and 10 CFR Part 781, any decision concerning the revocation or modification of its license.

(f) Contractor action to protect the Government's interest.

(1) The contractor agrees to execute or to have executed and promptly deliver to the Patent Counsel all instruments necessary to:

(i) Establish or confirm the rights the Government has throughout the world in those subject inventions to which the contractor elects to retain title, and

(ii) Convey title to DOE when requested under (d) above and to enable the Government to obtain patent protection throughout the world in that subject invention.

(2) The contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the contractor each subject invention made under this contract in order that the contractor can comply with the disclosure provisions of (c) above and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. The disclosure format should require, as a minimum, the information required by (c)(1) above. The contractor shall instruct such employees through the employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to United States or foreign statutory bars.

(3) The contractor will notify the Patent Counsel of any decision not to continue prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than thirty days before the expiration of the response period required by the relevant patent office.

(4) The contractor agrees to include, within the specification of any United States

patent applications and any patent issuing thereon covering a subject invention, the following statement "This invention was made with Government support under (identify the contract) awarded by the Department of Energy. The Government has certain rights in the invention."

(5) The contractor agrees to:

(i) Upon request, provide a report prior to the close-out of the contract listing all subject inventions or stating that there were none;

(ii) Provide, upon request, a copy of the patent application, filing date, serial number and title, patent number and issue date for any subject invention in any country in which the contractor has applied for a patent; and

(iii) Provide, upon request, but not more than annually, listings of all subject inventions which were disclosed to DOE during the applicable reporting period.

(g) Subcontracts.

(1) The contractor will include this clause, suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental or research work to be performed by a small business firm or a domestic nonprofit organization. The subcontractor will retain all rights provided for the contractor in this clause, and the contractor will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.

(2) The contractor will include in all other subcontracts, regardless of tier, for experimental, developmental, demonstration or research work the patent rights clause of 41 CFR 9-9.107-5(a) or 9-9.107-6 as appropriate, modified to identify the parties.

(3) In the case of subcontracts at any tier, when the prime award with DOE was a contract (but not a grant or cooperative agreement) DOE, the subcontractor, and the contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and DOE with respect to those matters

covered by this clause, provided however that nothing in this paragraph is intended to confer any jurisdiction under the Contract Disputes Act in connection with proceedings under paragraph (j) of this clause.

*(h) Reporting on utilization of subject inventions.*

The contractor agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the contractor or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the contractor, and such other data and information as DOE may reasonably specify. The contractor also agrees to provide additional reports as may be requested by DOE in connection with any march-in proceeding undertaken by DOE in accordance with paragraph (j) of this clause. As required by 35 U.S.C. 202(c)(5), DOE agrees it will not disclose such information to persons outside the Government without permission of the contractor.

*(i) Preference for United States industry.*

Notwithstanding any other provision of this clause, the contractor agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject inventions in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the contractor or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

*(j) March-in-rights.*

The contractor agrees that with respect to any subject invention in which it has

acquired title, DOE has the right in accordance with the procedures in 37 CFR 401.6 and any supplemental regulations of DOE to require the contractor, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the contractor, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if DOE determines that:

(1) Such action is necessary because the contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

(2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the contractor, assignee, or their licensees;

(3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the contractor, assignee, or licensees; or

(4) Such action is necessary because the agreement required by paragraph (i) of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

*(k) Special provisions for contracts with nonprofit organizations.*

If the contractor is a nonprofit organization it agrees that:

(1) Rights to a subject invention in the United States may not be assigned without the approval of DOE, except where such assignment is made to an organization which has as one of its primary functions the management of inventions, provided that such assignee will be subject to the same provisions as the contractor;