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WORLD INTELLECTUAL PROPERTY ORGANIZATION
GENEVA

INTERGOVERNMENTAL COMMITTEE ON INTELLECTUAL PROPERTY AND GENETIC RESOURCES, TRADITIONAL KNOWLEDGE AND FOLKLORE

Second Session
Geneva, December 10 to 14, 2001

INFORMATION DOCUMENT ON CONTRACTUAL AGREEMENTS CONCERNING ACCESS TO GENETIC RESOURCES AND BENEFIT-SHARING

Document submitted by the Delegation of the United States of America

1. On December 11, 2001, the Delegation of the United States of America, at the second session of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, submitted a number of documents to the World Intellectual Property Organization (WIPO). They contained a list of Memoranda of Understanding between the National Cancer Institute (NCI) of the United States of America and various source country organizations, together with the standard Memorandum of Understanding (Annex I); a list of Letter of Collection Agreements entered into by the NCI, together with the standard form of such Letter of Collection Agreements (Annex II); the Natural Products Repository Material Transfer Agreement of the NCI (Annex III); information on the International Cooperative Biodiversity Group (ICBG) Program (Annex IV); and the FY20002 Guidelines for Germplasm Exchange Proposals and for Plant Exploration Proposals (Annex V).

2. The documents are reproduced in Annexes I through V respectively.

[Annexes follow]

MEMORANDA OF UNDERSTANDING BETWEEN NCI AND SOURCE COUNTRY ORGANIZATIONS AGREEMENTS FOR DIRECT COLLABORATION

Australia
Australian Institute of Marine Sciences, Townsville, Queensland.
Bangladesh
The University of Dhaka
Brazil
Fundacao Oswaldo Cruz – FIOCRUZ, Rio de Janeiro
South American Organization for Anticancer Drug Development, Porto Alegre
Universidade do Paulista, Sao Paulo
Universidade Federal do Parana
Universdade Federal do Ceara, Forteleza
China
Hong Kong University of Science and Technology
Kunming Institute of Botany, Yunnan
Peking University and State Key Laboratory, Beijing
Costa Rica
Instituto Nacional de Biodiversidad (INBio)
Fiji
University of the South Pacific, Suva
Iceland
The University of Iceland, Reykjavik
Korea
Korean Research Institute of Chemical Technology (KRICT)
Mexico
Instituto de Quimica, Universidad Nacional Autonoma de Mexico, Mexico City
New Zealand
National Institute of Water and Atmospheric Research (NIWA), Wellington
Nicaragua
Universidad Nacional Autonoma de Nicaragua, Leon
Pakistan
HEJ Research Institute of Chemistry, University of Karachi
Papua New Guinea
University of Papua New Guinea. Port Moresby
Panama
University of Panama
South Africa
Council for Scientific and Industrial Research (CSIR), Division of Food , Biological and Chemical Technologies (BIO/CHEMTEK), Pretoria
Rhodes University, Grahamstown
Zimbabwe
Zimbabwe National Traditional Healers Association (ZINATHA)

In addition, negotiations for MOUs are currently in progress with the following organizations:

Brazil
Centro Pluridisciplinar Pesquisas Quimicas, Universidade do Campinas (UNICAMP)
Egypt
National Research Center, Cairo (under negotiation)
Jamaica
(University of the West Indies)
Russia
Cancer Research Center, Russian Academy of Medical Sciences, Moscow

MEMORANDUM OF UNDERSTANDING BETWEEN
[SOURCE COUNTRY ORGANIZATION]
AND
THE DEVELOPMENTAL THERAPEUTICS PROGRAM
DIVISION OF CANCER TREATMENT AND DIAGNOSIS
NATIONAL CANCER INSTITUTE
UNITED STATES OF AMERICA

The Developmental Therapeutics Program (DTP), Division of Cancer Treatment and Diagnosis (DCTD), National Cancer Institute (NCI) is currently screening synthetic compounds and natural product materials derived from plants, marine macro-organisms and microbes as potential sources of novel anticancer drugs. The DTP is the drug discovery program of the NCI which is an Institute of the National Institutes of Health (NIH), an arm of the Department of Health and Human Services of the United States Government. While investigating the potential of natural products in drug discovery and development, NCI wishes to promote the conservation of biological diversity, and recognizes the need to compensate source country organizations and peoples in the event of commercialization of a drug developed from an organism collected within their countries' borders.

DTP/NCI has an interest in investigating plants, terrestrial and marine microorganisms and marine macro-organisms from [Source Country], and wishes to collaborate with the [Source Country Organization ("SCO")] in this investigation. DTP/NCI will make sincere efforts to transfer knowledge, expertise, and technology related to drug discovery and development to [SCO] in [Source Country] (as the agent appointed by the [Source Country] Government), subject to the provision of mutually acceptable guarantees for the protection of intellectual property associated with any patented technology. [SCO], in turn, desires to collaborate closely with the DTP/NCI in pursuit of the investigation of [Source Country]'s terrestrial plants, marine macro-organisms and microorganisms, and selected synthetic compounds subject to the following conditions and stipulations of this Memorandum of Understanding (MOU).

1). On the basis of in-house screening results in its anticancer screens, [SCO] may select both synthetic compounds and extracts of plants, marine macro-organisms and microorganisms (subject to previously determined limits as to numbers per year) for anticancer testing at DTP/NCI. If suitable in-house screens are not available, a list of available materials may be sent to DTP/NCI giving data as requested in Articles 2 and 3 below.

2). Prior to submission of the materials, [SCO] will send a data sheet, to be held in confidence by DTP/NCI, on each material so that DTP/NCI may check its databases for records of prior submission to DTP/NCI.

3). For pure compounds, the data sheet(s) will give pertinent available data as to chemical constitution, structure, biological data, solubility, toxicity and any precautions which need to be followed in handling, storage and shipping.

For crude extracts, data will be provided as to the source organism taxonomy, location and date of collection, any hazards associated with the organism, available biological data and any known medicinal uses of the organism/extracts.

4). DTP will inform [SCO] which of the materials are new to the program, and such materials will be shipped to DTP for screening. DTP will provide a record of the accession number for the materials. Quantities of materials required for initial testing are 5 mg for pure compounds and 10 mg for crude extracts.

5). All test results will be provided to [SCO] as soon as they are available, but not later than 270 days

(nine months) from the date of receipt of the sample. If available, *in vitro* test results will be delivered within 90 days from receipt of the sample. [SCO] will be informed in writing of any delays beyond this period (270 days) together with an explanation of the reason(s) for delay.

Data provided by [SCO] will be considered as confidential information of [SCO], if so labeled, and will be held confidentially by DTP/NCI, unless the data are already in the public domain. No data about the materials will be kept in files open to the public either by DTP/NCI, testing laboratories, or data processing facilities, all of which are U.S. government contractors. Only those employees directly engaged in the operation of DTP/NCI will have access to the files of information regarding the source and nature of confidential materials and results of testing, unless the release of data about the materials or the results of the testing are required under statute or by court order.

6). Any extracts exhibiting significant activity will be further studied by bioassay-guided fractionation in order to isolate the pure compound(s) responsible for the observed activity. Such fractionation will be carried out in [SCO] laboratories. If [SCO] has no available bioassay, DTP/NCI will assist [SCO] to establish the necessary bioassay systems subject to the availability of the necessary resources. Alternatively, or in addition, suitably qualified designated [SCO] scientists will be sent to DTP/NCI for the isolation studies subject to the terms stated below in Article 7. In addition, during the course of this MOU, DTP/NCI will assist the [SCO], thereby assisting the [SC], to develop the capacity to undertake drug discovery and development, including capabilities for the screening and isolation of active compounds from terrestrial and marine organisms.

7). Subject to the provision that suitable laboratory space and other necessary resources are available, DTP/NCI agrees to invite senior technician(s) and/or scientist(s) designated by [SCO] to work in the laboratories of DTP/NCI or, if the parties agree, in laboratories using technology which would be useful in furthering work under this MOU. The duration of such visits would not exceed one year except by prior agreement between [SCO] and DTP/NCI. The designated "Visiting Scientist(s)" will be subject to provisions usually governing Guest Researchers at NIH, except when carrying out research on materials provided by [SCO]. Costs and other conditions of visits will be negotiated in good faith prior to the arrival of the scientist(s).

8). In the event that an agent isolated and purified from materials provided by [SCO], and/or a synthetic compound provided by [SCO] meets the criteria established by the Drug Development Group (DDG) of NCI's DCTD (DTP's parent organization), which would include, but not be limited to, *in vivo* activity in rodent models, further development of the agent will be undertaken by DTP/NCI in collaboration with [SCO]. Once an active agent is approved by DTP/NCI for preclinical development (*i.e.*, has passed the DDG at Stage IIA), DTP/NCI will collaborate with [SCO] scientists in the development of the specific agent.

9). Both [SCO] and DTP/NCI recognize that inventorship will be determined under patent law. DTP/NCI and [SCO] will, as appropriate, jointly seek patent protection on all inventions developed jointly under this MOU by DTP/NCI and [SCO] employees, and will seek appropriate protection abroad, including in [Source Country], if appropriate. Application for patent protection on inventions made by [SCO] employees alone will be the responsibility of [SCO]. Application for patent protection on inventions made by DTP/NCI employees alone will be the responsibility of DTP/NCI.

With respect only to those compounds that have been determined to possess such significant anti-cancer potential as to be scheduled for clinical trials by DCTD, the U.S. Government shall have a royalty-free, irrevocable, nonexclusive license to manufacture and/or use by or for the U.S.

Government the invention(s) claimed in any patents that [SCO] may have or may obtain on such compounds or on a process for use of such compounds. However, this license will apply only to [SCO] patents that rely upon data generated by DTP/NCI or DTP/NCI testing laboratories. This license shall be only for medical research purposes related to or connected with the therapy of cancer. The term "medical research purposes" as used herein shall not include treatment of patients outside of clinical trials or commercial distribution of the compounds.

10). DTP/NCI will make a sincere effort to transfer any knowledge, expertise, and technology developed during such collaboration in the discovery and development process to [SCO], subject to the provision of mutually acceptable guarantees for the protection of intellectual property associated with any patented technology.

11). All licenses granted on any patents arising from the collaboration conducted under the terms of this MOU shall contain a clause referring to this MOU and shall indicate that the licensee has been apprised of this MOU.

12). Should the agent eventually be licensed to a pharmaceutical company for production and marketing, DTP/NCI will require the licensee to negotiate and enter into agreement(s) with [SCO] and/or an appropriate [Source Country] Government agency(ies). The agreement(s) will address the concern on the part of the [Source Country] government that pertinent agencies, institutions and/or persons receive royalties and other forms of compensation, as appropriate.

Such terms will apply equally to instances where an invention is directed to a direct isolate from a natural product material, a product structurally based upon an isolate from the natural product material, a synthetic material for which the natural product material provided a key development lead, a derivative of a synthetic compound provided by [Source Country] or [SCO], or a method of synthesis or use of any aforementioned isolate, product, material or derivative; though the percentage of royalties negotiated as payment might vary depending upon the relationship of the marketed drug to the originally isolated product. It is understood that the eventual development of a drug to the stage of marketing is a long term process which may require 10-15 years.

13). In obtaining licensees, DTP/NCI will require the applicant for license to seek as its first source of supply the natural products available from [Source Country]. If no appropriate licensee is found who will use natural products available from [Source Country], or if [SCO] or their suppliers cannot provide adequate quantities of raw materials at a mutually agreeable fair price, the licensee will be required to pay to the [Source Country] Government an amount of money (to be negotiated) to be used for expenses associated with cultivation of medicinal plant species that are endangered by deforestation, or for other appropriate conservation measures. These terms will also apply in the event that the licensee begins to market a synthetic material for which a material from [Source Country] provided a key development lead.

14) Article 13 shall not apply to organisms which are freely available from different countries (i.e., common weeds, agricultural crops, ornamental plants, fouling organisms) unless information indicating a particular use of the organism (e.g., medicinal, pesticidal) was provided by local residents to guide the collection of such an organism from [Source Country], or unless other justification acceptable to both [SCO] and DTP/NCI is provided. In the case where an organism is freely available from different countries, but a phenotype producing an active agent is found only in [Source Country], Article 13 shall apply.

15). Publication of data resulting from the collaboration under this MOU will be undertaken at times determined by an agreement between [SCO] and DTP/NCI.

16). It is the intention of NCI that [SCO] not be liable to DTP/NCI for any claims or damages arising from NCI's use of the material provided by [SCO]; however, no indemnification for any loss, damage, or liability is intended or provided by any party under this MOU. Each party shall be liable for any loss, claim, damage or liability, that said party incurs, as a result of said party's activities under this MOU, except that the NCI, as an agency of the United States, assumes liability only to the extent as provided under the Federal Tort Claim Act (28 U.S.C. § 171).

17) DTP/NCI will not distribute materials provided by [SCO] to other organizations without written authorization from [SCO]. However, should [SCO] wish to consider collaboration with organizations selected by NCI for distribution of materials acquired through NCI collection contracts, DTP/NCI will establish contact between such organizations and [SCO].

18). [SCO] scientists and their collaborators may screen additional samples of the same materials for other biological activities and develop them for such purposes independently of this MOU.

This MOU shall be valid as of the date of the final authorized signature below for an initial period of five (5) years, after which, it can be renewed by mutual agreement. It may be amended at any time subject to the written agreement of both parties. Copies of such amendments will be kept on file at both of the addresses indicated below. [SCO] and DTP/NCI are confident that this MOU will lay the basis for a mutually successful cooperation in discovering and developing new therapies in the treatment of cancer.

For the [SCO]:

_____

Date

mailing and contact address:

For the National Cancer Institute:

_____

Richard Klausner, M.D.
Director, National Cancer Institute

_____

Date

mailing and contact address:

Technology Transfer Branch
National Cancer Institute at Frederick
NCI-Frederick
Fairview Center, Suite 502
1003 - W. 7th Street
Frederick, MD 21701-8512
Telephone: 301-846-5465
Facsimile: 301-846-6820

[Annex II follows]

LETTER OF COLLECTION AGREEMENTS WITH NCI COLLABORATION IN THE COLLECTION OF PLANTS AND MARINE ORGANISMS

Bangladesh
Bangladesh National Herbarium, Dhaka
Cambodia
Forest and Wildlife Research Institute, Department of Forestry and Wildlife, Phnom Penh
Ecuador
The AWA Peoples Federation
Gabon
Centre National de la Recherche Scientifique et Technologique (CENAREST), Libreville
Ghana
University of Ghana, Legon
Laos
Research Institute of Medicinal Plants, Ministry of Public Health, Vientiane
Madagascar
Centre National D'Applications des Recherches Pharmaceutiques, Antananarivo
Papua New Guinea
University of Papua New Guinea, Port Moresby
Philippines
Philippines National Museum, Manila
Sarawak, Malaysia
State Government of Sarawak: State Department of Forests
Tanzania
Traditional Medicine Research Institute, Muhumbili University College of Health Sciences, University of Dar Es Salaam
Vietnam
Institute of Ecology and Biological Resources, National Center for Natural Science and Technology, Hanoi

Other collaborating source countries

NCI collections have also been performed in a number of other countries, which have not, as yet, signed official LOC agreements. NCI, however, is totally committed to the terms of the LOC irrespective of whether or not an official agreement has been signed. These countries are:

Bahrain; Belize; Bolivia; Cameroon; Central African Republic; Colombia; Dominica; Dominican Republic; Federated States of Micronesia (Chuuk, Yap etc.); Guatemala; Guyana; Honduras; Indonesia; Malaysia; Maldives; Marshall Islands; Martinique; Mauritius; Nepal; Palau; Paraguay; Peru; St. Lucia; Thailand; Tonga

LETTER OF COLLECTION

Agreement Between

[Source Country Organization]

and the

Developmental Therapeutics Program

Division of Cancer Treatment and Diagnosis

National Cancer Institute

UNITED STATES OF AMERICA

The Developmental Therapeutics Program (DTP), Division of Cancer Treatment and Diagnosis (DCTD), National Cancer Institute (NCI) is currently investigating plants, microbes, and marine macro-organisms as potential sources of novel anticancer drugs. The DTP is the drug discovery program of the NCI which is an Institute of the National Institutes of Health (NIH), an arm of the Department of Health and Human Services of the United States Government. While investigating the potential of natural products in drug discovery and development, NCI wishes to promote the conservation of biological diversity, and recognizes the need to compensate supplier organizations and peoples in the event of commercialization of a drug developed from an organism collected within their borders.

As part of the drug discovery program, DTP has contracts with various organizations for the collection of plants, microbes and marine macro-organisms worldwide. DTP has an interest in investigating plants, microbes and marine macro-organisms from the [Source Country], and wishes to collaborate with the [Source Country Government (SCG) or Source Country Organization(s) (SCO)], as appropriate, in this investigation. The collection of plants, microbes and marine macro-organisms will be within the framework of the collection contract between the NCI and the NCI Contractor (Contractor) which will collaborate with the appropriate agency in the [SCG or SCO]. The NCI will make sincere efforts to transfer knowledge, expertise and technology related to drug discovery and development to the appropriate [Source Country Institution (SCI)] in [[Source Country] as the agent appointed by the [SCG or SCO], subject to the provision of mutually acceptable guarantees for the protection of intellectual property associated with any patented technology. The [SCG or SCO], in turn, desires to collaborate closely with the DTP/NCI in pursuit of the investigation of plants subject to the conditions and stipulations of this agreement.

The role of DTP, DCTD, NCI in the collaboration will include the following:

1) DTP/NCI will screen the extracts of all plants provided from [Source Country] for anticancer activity, and will provide the test results to [SCI] on a quarterly basis. Such results will be channeled via Contractor.

2) The test results will be kept confidential by all parties, with any publication delayed until DTP/NCI has an opportunity to file a patent application in the United States of America on any active agents isolated. Such application will be made according to the terms stated in Article 6.

3) Any extracts exhibiting significant activity will be further studied by bioassay-guided fractionation in order to isolate the pure compounds(s) responsible for the observed activity. Since the relevant bioassays are only available at DTP/NCI, such fractionation will be carried out in DTP/NCI laboratories or laboratories approved by DTP/NCI. A suitable qualified scientist designated by [SCI] may participate in the process subject to the terms stated in Article 4. In addition, in the course of the contract period, DTP/NCI will assist [SCG or SCO], in conjunction with [SCI], to develop the capacity to undertake drug discovery and development, including capabilities for the screening and isolation of active compounds from plants, microbes and marine organisms.

4) Subject to the provision that suitable laboratory space and other necessary resources are available, DTP/NCI agrees to invite a senior technician or scientist designated by [SCI] to work in laboratories of DTP/NCI or, if the parties agree, in laboratories using technology which could be useful in furthering work under this agreement. The duration of such a visit would not exceed one year except by prior agreement between [SCI] and DTP/NCI. The designated Guest Researcher will be subject to provisions usually governing Guest Researchers at NIH, except when carrying out research on materials provided through collections in [Source Country]. Salary and other conditions of exchange will be negotiated in good faith.

5) In the event of the isolation of a promising agent from a plant, microbe or marine macro-organism collected [Source Country], further development of the agent will be undertaken by DTP/NCI in collaboration with [SCI]. Once an active agent is approved by the DTP/NCI for preclinical development, [SCI] and the DTP/NCI will discuss participation by SCI scientists in the development of the specific agent.

The DTP/NCI will make a sincere effort to transfer any knowledge, expertise, and technology developed during such collaboration in the discovery and development process to [SCI], subject to the provision of mutually acceptable guarantees for the protection of intellectual property associated with patented technology.

6) DTP/NCI will, as appropriate, seek patent protection on all inventions developed under this agreement by DTP/NCI employees alone or by DTP/NCI and [SCG or SCO] employees jointly, and will seek appropriate protection abroad, including in [Source Country], if appropriate.

7) All licenses granted on any patents arising from this collaboration shall contain a clause referring to this agreement and shall indicate that the licensee has been apprised of this agreement.

8) Should the agent eventually be licensed to a pharmaceutical company for production and marketing, DTP/NCI, will require the successful licensee to negotiate and enter into agreement(s) with the [SCG] agency(ies) or [SCO] as appropriate. This agreement(s) will address the concern on the part of the [SCG or SCO] that pertinent agencies, institutions and/or persons receive royalties and other forms of compensation, as appropriate.

9) Such terms shall apply equally to instances where an invention is directed to a direct isolate from a natural product material, a product structurally based upon an isolate from the natural product material, a synthetic material for which the natural product material provided a key development lead, or a method of synthesis or use of any aforementioned isolate, product or material; though the percentage of royalties negotiated as payment might vary depending upon the relationship of the marketed drug to the originally isolated product. It is understood that the eventual development of a drug to the stage of marketing is a long term process which may require 10-15 years.

10) In obtaining licensees, the DTP/NCI will require the license applicant to seek as its first source of supply the natural products from [Source Country]. If no appropriate licensee is found that will use natural products available from [Source Country], or if the [SCG] or [SCO], as appropriate, or its suppliers cannot provide adequate amounts of raw materials at a mutually agreeable fair price, the licensee will be required to pay the [SCG] or [SCO], as appropriate, an amount of money (to be negotiated) to be used for expenses associated with cultivation of medicinal plant species that

are endangered by deforestation, or for other appropriate conservation measures. These terms will also apply in the event that the licensee begins to market a synthetic material for which a material from [Source Country] provided a key development lead.

11) Section 10 shall not apply to organisms which are freely available from different sources (i.e., common weeds, agricultural crops, ornamental plants, fouling organisms) unless information indicating a particular use of the organism (e.g., medicinal, pesticidal) was provided to guide the collection of such an organism from [source Country], or unless other justification acceptable to both the [SCG or SCO] and the DTP/NCI is provided. In the case where an organism is freely available from different sources, but a phenotype producing an active agent is found only in [Source Country], Article 10 shall apply.

12) DTP/NCI will test any pure compounds submitted by the [SCG or SCO] and [SCI] scientists for antitumor activity, provided such compounds have not been tested previously in the DTP/NCI screens. If significant antitumor activity is detected, further development of the compound and investigation of patent rights will, as appropriate, be undertaken by DTP/NCI in consultation with [SCI] and the [SCG or SCO].

Should an agent derived from the compound eventually be licensed to a pharmaceutical company for production and marketing, DTP/NCI will require the successful licensee to negotiate and enter into agreement(s) with the appropriate [SCG agency(ies) or SCO]. This agreement will address the concern on the part of the [SCG or SCO] that pertinent agencies, institutions and/or persons receive royalties and other forms of compensation, as appropriate.

13) DTP/NCI may send selected samples to other organizations for investigation of their anti-cancer, anti-HIV or other therapeutic potential. Such samples will be restricted to those collected by NCI contractors unless specifically authorized by [SCG or SCO]. Any organization receiving samples must agree to compensate the [SCG or SCO] and individuals, as appropriate, in the same fashion as described in Articles 8-10 above, notwithstanding anything to the contrary in Section 11.

The role of the Source Country Government (SCG) or Source Country Organization(s) (SCO) in the collaboration will include the following:

[SCI]-[Source Country]-DTP/NCI LOC (Natural Products LOC/MOU No. ___)
December 7, 2001

1) The appropriate agency in [SCG or SCO] will collaborate with Contractor in the collection of plants, microbes and marine macro-organisms, and will work with Contractor to arrange the necessary permits to ensure the timely collection and shipment of materials to DTP/NCI.

2) Should the appropriate agency in [SCG or SCO] have any knowledge of the medicinal use of any plants, microbes and marine macro-organisms by the local population or traditional healers, this information will be used to guide the collection of plants, microbes or marine macro-organisms on a priority basis where possible. Details of the methods of administration (e.g., hot infusion, etc.) used by the traditional healers will be provided where applicable to enable suitable extracts to be made. All such information will be kept confidential by DTP/NCI until both parties agree to publication.

The permission of the traditional healer or community will be sought before publication of their information, and proper acknowledgment will be made of their contribution.

3) The appropriate agency in [SCG or SCO] and Contractor will collaborate in the provision of further quantities of active raw material if required for development studies.

4) In the event of large amounts of raw material being required for production, the appropriate agency of the [SCG or SCO] and Contractor will investigate the mass propagation of the material in the [Source Country]. Consideration should also be given to sustainable harvest of the material while conserving the biological diversity of the region, and involvement of the local population in the planning and implementation stages.

5) [SCG or SCO] and SCI scientists and their collaborators may screen additional samples of the same raw materials for other biological activities and develop them for such purposes independently of this agreement.

This agreement shall be valid as of the date of the final authorized signature below for an initial period of five (5) years, after which it can be renewed by mutual agreement. It may be amended at any time subject to the written agreement of both parties. Copies of such amendments will be kept on file at both of the addresses indicated below.

[SCI] [Source Country]-DTP/NCI LOC (Natural Products LOC/MOU No. ___)
December 7, 2001

For the National Cancer Institute

Richard Klausner, M.D.
Director, National Cancer Institute

Date

Mailing and contact address:

Technology Development Branch
National Cancer Institute at Frederick
(NCI-Frederick)
Fairview Center, Suite 502
1003 W. 7th Street
Frederick, MD21701-8512
U.S.A.
Telephone: 301-846-5465
Facsimile: 301-846-6820

For [SCI] or [SCO]

Name (typed):
Title:

Date

Mailing and contact address:

[SCI] [Source Country]-DTP/NCI LOC (Natural Products LOC/MOU No. ___)
December 7, 2001

[Annex III follows]

Model Agreement First Approved: May 22, 1989
Last Revised and Approved by TTB/NCI and DCTD/NCI: October 29 , 1999

Natural Products Branch
Developmental Therapeutics Program
Division of Cancer Treatment and Diagnosis
National Cancer Institute
National Institutes of Health

NATURAL PRODUCTS REPOSITORY MATERIAL TRANSFER AGREEMENT

This Material Transfer Agreement ("MTA") has been adopted for use by the National Institutes of Health ("NIH") and revised for use in the Natural Products Branch ("NPB") of the Developmental Therapeutics Program (DTP), of the Division of Cancer Treatment and Diagnosis ("DCTD"), of the National Cancer Institute ("NCI") of the NIH for all transfers of research materials ("Research Material") from the Natural Products Repository ("NPR") of NPB, DTP, DCTD, NCI.

The NPR represents a resource of natural products (e.g., plant extracts, microbial cultures, etc.) which are being used for the discovery and development of new agents for the treatment and prevention of cancer and AIDS. These Research Materials have been collected from one or more Source Countries, generally in collaboration with one or more Source Country Organizations. ("Source Country Organization" or "SCO" is defined as a governmental entity of a country from which the Research Material was obtained or an appropriate organization affiliated with the Source Country with authority to provide the Research Material to NCI.) NCI wishes to promote the use of this national resource by other organizations involved in the discovery of bioactive agents of relevance to the NCI mission, and will provide limited quantities of Research Materials from the NPR to selected qualified research organizations for such purposes, under the selection criteria and procedures set forth in Appendix A.

This MTA specifies the conditions under which NCI will transfer samples to successful applicant investigators. In the event an applicant is successful, this MTA represents the terms of agreement between NCI and the applicant investigator's institution [hereinafter referred to as "Recipient," except that "Recipient" will refer to the investigator as an individual if he or she is unaffiliated with an institution].

Specifically:

1. NCI shall disclose to Recipient Confidential Information on the Research Materials currently available from the NPR solely for the purpose of and in sufficient detail to enable Recipient to identify and select specific Research Materials for evaluation as described in Recipient's proposal to NPB, DTP and approved by the DTP Committee on Natural Products Repository Access on _____.

Alternatively, Recipient may specify immediately below the types of Research Materials it would like to access from the NPB:

Plant and marine extracts

However, Recipient will not have access to Research Materials in the Active Repository (i.e., materials that are or recently have been the subject of investigation by NCI scientists), nor will it be informed about

what materials are in the Active Repository, unless Recipient agrees to the special terms appearing on Page 6 of this Agreement.

Recipient agrees to accept the Confidential Information and employ all reasonable efforts to maintain the Confidential Information secret and confidential, such efforts to be no less than the degree of care employed by Recipient to preserve and safeguard Recipient's own confidential information. The Confidential Information shall not be disclosed, revealed or given to anyone except employees of Recipient who shall have a need to have Confidential Information in connection with Recipient's evaluation, and who have entered into a secrecy agreement with Recipient (or are covered by a secrecy obligation to Recipient) under which such employees are required to maintain confidential and secure the proprietary information of Recipient. Furthermore, such employees shall be advised by Recipient of the confidential nature of the Confidential Information and of their obligation to treat the Confidential Information accordingly.

It is hereby acknowledged by NCI that Recipient shall incur no liability merely for examining and considering the Confidential Information; however, Recipient agrees that it will not use the Confidential Information for any purpose except as set forth herein.

2. NCI agrees to transfer to Recipient for evaluation specific crude extracts listed in the Confidential Information, upon request by Recipient and approval by NPB, DTP. An electronic record of the specific extracts provided will be kept by the NPB and will be updated as Research Materials are provided to Recipient. This electronic record will serve as an appendix to this agreement. A written copy of this record will be provided on a periodic basis or upon request to the Recipient.

3. THIS RESEARCH MATERIAL MAY NOT BE USED IN HUMAN SUBJECTS. This Research Material will only be used for research purposes by Recipient under suitable containment conditions. Exchange of samples among collaborating organizations or individuals not party to this MTA may occur only upon execution of a copy of this MTA by each such collaborator. This Research Material will not be used for commercial purposes such as production or sale. A commercialization license may be required for commercial use of the Research Material. Recipient agrees to comply with all Federal rules and regulations applicable to the Research Project and the handling of the Research Material.

4. In all oral presentations or written publications concerning the Research Project, Recipient will acknowledge the contribution of NCI, as well as the SCO and any other appropriate organizations or individuals as identified by NCI, unless requested otherwise. To the extent permitted by law, Recipient agrees to treat in confidence, for a period of three (3) years from the date of its disclosure, any and all of NCI's written information about this Research Material that is stamped "CONFIDENTIAL" except for information that was previously known to Recipient or that is or becomes publicly available or which is disclosed to Recipient without a confidentiality obligation. Recipient may publish or otherwise publicly disclose the results of the Research Project. However, if NCI has given CONFIDENTIAL information to Recipient, such publication or public disclosure may be made only after the SCO has had thirty (30) days following notification by the NPB to review the proposed disclosure, except in the event that a shortened time period is required pursuant to a court order or request under the Freedom of Information Act, 5 U.S.C. 522. Recipient agrees to inform the NPB, under reasonable reporting requirements, of the intent, progress, results and additional research plans for the use of the Research Material. NCI agrees to reciprocally maintain information Recipient identifies as "CONFIDENTIAL" under the terms set forth above.

5. This Research Material represents a significant investment on the part of NCI and is considered proprietary to NCI. Recipient agrees to retain control over this Research Material, and further agrees not to transfer the Research Material to others not under Recipient's supervision without advance written

approval of NCI. The execution by others of an MTA such as this, as described in Article 3 above, would constitute one form of such approval. NCI reserves the right to distribute the Research Material to others and to use it for its own purposes. When the Research Project is completed, or three (3) years have elapsed, whichever occurs last, the Research Material will be destroyed or disposed of as mutually agreed by NCI and Recipient.

6. This Research Material is provided as a service to the research community. IT IS BEING SUPPLIED TO RECIPIENT WITH NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NCI makes no representations that the use of the Research Material will not infringe any patent or proprietary rights of third parties.

7. Recipient agrees to pay all reasonable costs for the preparation, handling and shipment of this Research Material to Recipient. Further, Recipient agrees that all samples of Research Material will be provided contingent on the availability of a sufficient supply of Research Material, but in no case will samples be provided that adversely affect the research programs of NCI.

8. NCI shall retain title to the Research Material, per se, and any patent or other intellectual property rights in inventions by its employees in the course of the Research project. Furthermore, Recipient agrees that any intellectual property rights in inventions made by the employees, agents or contractors of the Recipient will vest by operation of inventorship as determined under appropriate patent statutes in the controlling jurisdiction(s). Recipient agrees not to claim, infer, or imply Government endorsement of the Research Project, the institution or personnel conducting the Research Project, or any resulting commercial product(s). Recipient agrees to hold the United States harmless and to indemnify the Government for all liabilities, demands, damages, expenses and losses arising out of Recipient's use for any purpose of the Research Material.

9. Recipient acknowledges that NCI may have obtained the Research Materials from the SCO under a Letter of Collection ("LOC") agreement stipulating that NIH will require any commercial licensee of an invention by NCI personnel derived from the Research Material (whether the invention is directed to a direct isolate from the Research Material, a product structurally based upon an isolate from the Research Material, a synthetic material for which the Research Material provided a key development lead, or a method of synthesis or use of any aforementioned isolate, product or material) to enter into an agreement that addresses the mutual concerns of NIH's licensee and SCO, respectively.

Even if the Research Materials were not obtained under such an LOC agreement, as an agency of the U.S. Government, NCI complies with the U.S. Government's policy to follow the principles articulated in the United Nations Convention on Biological Diversity ("U.N. CBD"). The U.N. CBD calls for "sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the [source country] providing such resources." (U.N. CBD; Article 15.7)

In order to abide by these principles and address the interests of SCO, Recipient further agrees that, should an invention derived from the Research Material eventually be developed and marketed by the Recipient, or licensed by Recipient to a company or other institution for development and commercialization (whether the invention is directed to a direct isolate from the Research Material, a product structurally based upon an isolate from the Research Material, a synthetic material for which the Research Material provided a key development lead, or a method of synthesis or use of any aforementioned isolate, product or material), Recipient or Recipient's Licensee(s) will negotiate and enter into an agreement with the appropriate SCO. This agreement between the Recipient and/or Recipient's Licensee(s) and SCO will address the mutual concerns of both parties. Recipient agrees that

negotiations between either Recipient or Recipient's Licensee(s) and the SCO must commence prior to the start of clinical development studies that are conducted, directed or sponsored by either Recipient or Recipient's Licensee(s). Negotiations must be completed and an agreement executed prior to the commercial sale of an agent structurally based or isolated from the Research Material. This agreement relating to the agent must be binding upon SCO, Recipient and any Licensee(s) or assignees of Recipient with respect to any intellectual property rights relating to the agent.

Recipient will seek to utilize the Source Country as its first source of supply and/or cultivation for raw (natural product) materials required for the manufacture of an agent (regardless of whether the agent is an isolated natural product or is structurally based thereon) if such material can be made available in quantities and quality sufficient for use by the Recipient at a mutually agreeable fair price. If such material must be cultivated, recipient agrees to seek to utilize Source Country as its first source of such cultivation efforts.

10. In addition to the reporting requirements under Article 4, Recipient will provide screening results on the Research Material to NPB, DTP. Following removal of identified proprietary information (jointly defined by Recipient and DTP/NCI), DTP/NCI will provide summary screening data to the SCO.

11. NCI can promise an option to license intellectual property rights only under a Cooperative Research and Development Agreement (CRADA). If Recipient desires prospective license rights to inventions derived from Research Material made in whole or part by NCI employees, a formal CRADA must be negotiated. For general inquiries regarding CRADAs or NCI technology transfer policies, contact the NCI Technology Development and Commercialization Branch at (301)-846-5465.

12. This MTA shall be construed in accordance with Federal law as applied by the Federal courts in the District of Columbia.

13. This Materials Transfer Agreement between NCI and the Recipient will be effective when signed by all parties. By signing this MTA, the Recipient acknowledges that it has received and read a copy of the policy statement on Distribution of Materials from the Natural Products Repository, which is attached as Appendix A.

14. The provisions of this Agreement are severable. If any item or provision of this Agreement shall to any extent be invalid or unenforceable, the remainder of this Agreement shall not be affected thereby, and each item and provision of this Agreement shall be valid and shall be enforced to the fullest extent permitted by law. The undersigned expressly certifies or affirms that the contents of any statements made or reflected in this document are truthful and accurate.

FOR RECIPIENT:

Date: _____

_____
Applicant Investigator's Signature
Name (Type or Print):
Title (Type or Print):

Date: _____

_____
Signature for Recipient's Authorizing Official
Name (Type or Print):
Title (Type or Print):

Recipient's Address for Correspondence Related to this Agreement to:

_____

_____ Tel: _____

_____ Fax: _____

FOR THE NATIONAL CANCER INSTITUTE:

Date: _____

_____
Edward A. Sausville, M.D., Ph.D.
Associate Director, Developmental Therapeutics Program,
DCTD

Date: _____

_____
Thomas Stackhouse, Ph.D.
Technology Transfer Branch, NCI

Address correspondence related to this Agreement to:

NCI-Technology Transfer Branch
National Cancer Institute at Frederick (NCI-Frederick)
Fairview Center, Suite 502
1003 - W. 7th Street
Frederick, MD 21701

telephone: 301-846-5465
fax: 301-846-6820

SPECIAL ADDITIONAL PROVISIONS THAT APPLY TO SAMPLES FROM THE ACTIVE REPOSITORY

In the case of applications for access to Research Material from the Active Repository (i.e., materials that are or recently have been the subject of investigation by NCI scientists), Recipient recognizes that such materials are of current interest to NCI and that there has been intellectual input by NCI scientists into the screening, and in many cases further analysis and development, of such materials. Recipient therefore agrees that the use of the Research Material constitutes a form of collaboration with NCI's Natural Products Branch or other designated NCI facility, as appropriate. Recipient further agrees to comply with the provisions set forth hereunder, so that the isolation, purification and testing of the Research Material will be closely coordinated with NCI's efforts to ensure that pure isolates from such Research Material may be further developed in an efficient manner and in cooperation with the NCI.

In particular, Recipient agrees to report in a timely fashion to NCI the identity and nature of any isolates, including identified compounds or combinations of compounds, derived from the Research Material; as well as any processes for making or using such isolates. In addition, Recipient agrees to report to the NCI Technology Development and Commercialization Branch (see the address on the Signature Page) Recipient's intention to file patent applications on any inventions developed from the use of Research Material and to negotiate in good faith a Confidentiality Disclosure Agreement with NCI under which NCI/DTP and Recipient will exchange information regarding their respective research and development efforts to ensure that Recipient's and NCI's interests in Research Material may be respectively, and where appropriate jointly, protected.

Recipient understands that a limited number of samples from the Active Repository (generally no more than twenty) can be made available at any one time under any single Agreement. Recipient agrees that once it has completed analysis of a sample, it will return any and all remaining sample to NPB, DTP. At any time following Recipient's receipt of the first group of samples, DTP has the right to make access to additional samples from DTP repositories contingent upon Recipient's entering into a Cooperative Research and Development Agreement (CRADA) with NCI to ensure that Recipient's and NCI's respective development efforts are coordinated.

Recipient's signatures on below signify agreement to these special provisions regarding access to Research Material from the Active Repository. Access to Research Material from the Active Repository will not be granted without such agreement.

Signature of Recipient's investigator signifying agreement to the Special Provisions governing access to samples from the Active Repository:

_____ **Date:** _____

Signature of Recipient's authorizing official signifying agreement to the Special Provisions governing access to samples from the Active Repository:

_____ **Date:** _____

Original, December 13,1991
Last Revised by DTP/NCI October 29, 1999

Appendix A

POLICY FOR THE DISTRIBUTION OF MATERIALS FROM THE NATURAL PRODUCTS REPOSITORY

The Natural Products Repository (NPR) of the National Cancer Institute's (NCI) Developmental Therapeutics Program (DTP) represents a unique resource in terms of both the magnitude and diversity of materials that might be utilized for the discovery and development of new agents for cancer, HIV/AIDS, and other diseases, as well as for other meritorious research endeavors. As a national resource, it is incumbent on the NCI to assure that it is utilized to the greatest extent for the public good.

Two programs for access to the NPR have been established:

- The Open Repository Program.
- The Active Repository Program.

OPEN REPOSITORY PROGRAM

This program was established in 1992 to enable the extramural community to investigate NPR materials, not currently under active investigation at the NCI, as potential sources of agents for the treatment of cancer, AIDS, opportunistic infections, and diseases of concern to the Countries of Origin of the materials. In 1999, the scope of investigation was expanded to include all human diseases.

Distribution of Materials:

- **Vialed Samples:** Samples (25 mg), identified by a code number and by taxonomy to family level, may be shipped to a recipient at a maximum rate of 500 per month (this rate may be accelerated if a formal CRADA is in place). Particular genera and/or species within a family, or samples from specified Countries of Origin, may be included or excluded, as far as possible, from shipments if requested

- **Plated Samples:** Samples may also be shipped to a recipient in 96-well polypropylene (15mg or 500ug per well) or polystyrene (50ug per well) plates; there is no restriction on the rate of shipment of plated samples. No initial exclusivity will be granted to the extracts, nor will any information other than the type and source of the extracts on a particular plate be provided (i. e. plate # contains 88 organic plant extracts at 50ug per well in lanes 2 through 12). Plates may also contain samples from the Active Repository Program; such extracts will only be available to investigators qualified for access to the Active Repository Program. **Identical plates may be sent to multiple investigators.**

- An exclusivity period of 3 months is granted for testing of the materials, after which the test results are submitted to the DTP Natural Products Branch (NPB).

- On identification of active extracts, investigators will communicate with NPB directly by e-mail or fax, and will be informed whether or not the active materials are available.

- **Investigators will have active samples reserved for further investigation on a first-come first-served basis.** Where more than one investigator observes activity for a particular extract, it will be reserved for the first investigator to report activity, and a waiting list of other interested investigators will be established.

- Extracts will not be available if they are under active study (on reserve) in either the Open Repository Program (maximum of 6 months exclusivity) or Active Repository Program (up to 15 months exclusivity with the possibility of extension, if necessary).

- Once the relevant extract is released by the first investigator, it will be shipped to the next in line on the waiting

list.

- A further supply of any active materials (75-100 mg), together with the rest of the taxonomy and relevant collection data, are provided.

- A further 3 months exclusivity is granted to permit secondary testing and/or initial isolation of the active agents. At the end of this time the recipient will inform NPB of its discoveries and its level of interest.

- **The maximum period of exclusivity on any extract is 6 months.**

- At the end of the 6 month period from the initial receipt of the material, NPB will inform the Countries of Origin of the materials of the results obtained, using language agreed to in advance by the recipient.

- The Countries of Origin will be given the name of the recipient organization, and will be informed that the organization will contact them if further material is required. Acquisition of further material will normally be the responsibility of the recipient organization working through the original collector (if possible) and the relevant Source Country permitting agency.

- Since it is the responsibility of the NCI to ensure that the conditions of the *Material Transfer Agreement* (MTA) are maintained during this and subsequent stages of development, NPB will maintain interaction with the recipient organization and the Countries of Origin.

Requests for Access

Requests for NPR materials wilt be accepted from research organizations and individual investigators in the form of a brief proposal (up to 5 pages) formatted as follows:

- Introduction.

- Research Hypothesis.

- Screening Process, together with description of characteristics of the screen.

- Personnel.

- Organizational Research Capabilities.

Requests will normally be reviewed by staff from the NCI Division of Cancer Treatment and Diagnosis (DCTD) appointed by the Director, DCTD. Ad hoc members from outside the Division, Institute, or NIH may be appointed as needed, while ensuring appropriate confidentiality of information provided in the proposal.

The review will consider primarily the scientific merit of the proposal related to the screening target for drug discovery, and the applicant's chemical and pharmaceutical expertise for adequate follow-up on the natural products supplied from the NPR. Although preference will be given to proposals related to cancer or AIDS, other areas of research will be given consideration.

The Committee to review applications for access to the Natural Products Repository will accept and review proposals on a continuing basis. This schedule is subject to change depending on the volume of applications.

Conditions of Access

The staff of the Natural Products Branch will be administratively responsible for the operation of this program. Successful applicants will subsequently deal directly with the Branch to request material and report scientific results.

Organizations and 'individual investigators whose applications are approved will be provided selected samples under the terms of a Material Transfer Agreement (to which this Policy Statement is attached), which has been modified from the standard Public Health Service (PHS) agreement to meet the specific needs of this program. Important aspects of this agreement are:

- Recipients must agree to protect the interests of the Countries of Origin providing the materials to NCI.
- The NCI will retain ownership of the material per se. Such ownership is separate from intellectual property rights.
- The recipient will pay the "out-of-pocket" costs of preparing and shipping samples.
- In no case will a sample be provided that depletes the supply of that material or otherwise affects adversely NCI's own efforts.
- Unused samples will be disposed of in a manner to be agreed on by both parties.
- A reporting procedure will be established to assure that NCI is kept informed of the usage of Research Materials. To this end, recipients are encouraged to contact the NPB as early as possible once a particular extract has proven to be of interest in order that suitable arrangements for further development may be agreed upon by all parties. These may include full taxonomic identification; provision of more extracted Research Material; aid in obtaining raw material via the then current Collection Contractors; or the negotiation of a formal Cooperative Research and Development Agreement (CRADA).
- Research results derived from this Research Material will be transmitted in a timely manner to the NCI.
    - A summary of the screening results relating to the Research Material and any purified natural products will be provided to the relevant organizations in the Countries of Origin.
    - Safeguards will be installed to prevent disclosure of proprietary information during this interchange.
    - As part of this interchange of information, if a research organization has been identified within the Country of Origin that is actively pursuing studies in the relevant scientific area, then the recipient will be informed with the aim of facilitating collaborative studies.
- All test information from NCI that is provided to recipient, collector, and the Country of Origin government or an appropriate organization within the Country of Origin is to be maintained as "CONFIDENTIAL" with any publication delayed until DTP authorizes release to outside parties.
- The NCI will not grant unlimited access to Research Materials within the repository. The selection of samples will be determined by the NCI after discussion with the recipient, and the size of samples will be limited to that required for primary and limited secondary testing in the recipient's screens.
- Large amounts of raw material required for follow-up isolation and development of active agents will generally be obtained by recipients at their own expense and in accordance with established agreements among NCI, its collecting agents and the Source Country Organization. In specific cases, however the NCI may agree to participate with the investigator(s) in the recollection process to procure additional raw and/or Research Material if the initial findings are of substantial scientific interest to the program.

Further technical information may be obtained from:

Dr. David Newman
Natural Products Branch
NCI-Frederick
Fairview Center, Room 206

P. 0. Box B
Frederick, MD 21702-1201

Phone: 301-846-5387
Fax: 301-846-6178
Email: <newman@dtpax2.ncifcrf.gov>

Test results and requests for samples may be submitted to:

Mrs. Erma Brown at <brown@dtpax2.ncifcrf.gov> or at the address and contact numbers given above.

Requests must be copied to Drs. Cragg and Newman at:

<cragg@dtpax2.ncifcrf.gov>; <newman@dtpax2.ncifcrf.gov>

ACTIVE REPOSITORY PROGRAM

This program has been established to permit qualified U.S. investigators access to materials active in the 60 cell line anti-tumor screen, in addition to those falling into the Open Repository Program. As of Febraury, 1999, over 3,000 samples have been designated as active.

Qualifications for Access

- U. S.-based investigators whose screening activities have been peer-reviewed by suitable bodies (e.g., U. S. Government funding agencies, the American Cancer Society and other comparable U. S. funding organizations). Such investigators will provide current grant number(s).
- U. S. chartered organizations whose screening activities have not been peer-reviewed. Such organizations will submit short proposals for review as discussed under "Requests for Access" in the section on the Open Repository Program.
- Organizations based in Countries of Origin that have participated in NCI collection programs. Such organizations have access to extracts of organisms collected in their own countries.

All investigators and organizations requesting access to the Active Repository Program will be asked to provide the following information:

- A brief description of their assays and their relevance to cancer.
- A description of the expertise in chemistry available for bioassay-guided isolation studies.
- The types of extracts desired for testing (one or more of marine or terrestrial plants or marine invertebrates).

Distribution of Materials

- Upon signing of the special terms appearing on page 6 of the Material Transfer Agreement (to which this policy statement is attached), NPB will provide investigators with electronic media containing details of all materials available (full taxonomy and anti-cancer screening data sets composed of single- and multi-dose tests, together with mean graphs).
- **Investigators may choose up to 20 samples for further study.**
- 25 mg of each selected sample will be provided for investigators to determine if their assays will detect the activities.
- **Plated Samples**: Investigators receiving plated samples through the Open Repository Program may identify

extracts restricted to the Active Repository Program. Such extracts may be made available to the investigators providing they qualify for access to the Active Repository, and subject to the 20 sample restriction mentioned above.

- On identification of active extracts, investigators will communicate with NPB directly by e-mail or fax, and will be informed whether or not the active materials are available.

- **Investigators will have active samples reserved for further investigation on a first-come first-served basis.** Where more than one investigator observes activity for a particular extract, it will be reserved for the first investigator to report activity, and a waiting list of other interested investigators will be established.

- A three month exclusivity period will be granted from the date of receipt of the samples during which time the investigators will inform NPB whether their assays are effective.

- Materials for further investigation may be obtained as follows:

  Grantees, non-profit organizations and small businesses (that meet SBIR criteria): NPB will provide further materials in negotiated amounts.

  For-profit organizations not qualifying as small businesses under SBIR regulations will be responsible for the acquisition of further material, working in collaboration with the original collector (if possible), and the Country of Origin as stipulated in Article 9 of the MTA.

- A further exclusivity period of one year from the time of receipt of the second amount of material will be given to perform bioassay-guided isolation of the active agents. If necessary this period may be extended after review of progress by NPB and the investigator.

- The 20 samples are on a rotating basis. When the investigator decide not pursue further research on a sample, or identifies the active agent(s) in a sample, the remainder of that particular sample will be returned to NPB within five working days of reclassification.

- For each sample reclassified as being of no further interest to the investigator, one new sample may be requested. No more than 20 samples from the Active Repository Program may be held at one time.

- NCI will be kept informed of the progress of the investigations, and will help in the development of any agents meeting the approval criteria of the DCTD Drug Development Committee.

- Since it is the responsibility of the NCI to see that the conditions of the MTA are maintained during this and subsequent stages of development, NPB will maintain interaction with the investigators and the relevant Countries of Origin.

Conditions of Access

The same conditions of access as apply to the Open Repository Program (vide infra) generally apply to the Active Repository Program, except for differences specified under the Distribution of Materials. Further technical information may be obtained from:

Dr. Gordon Cragg
Natural Products Branch
NCI-Frederick
Fairview Center, Room 206
P. 0. Box B
Frederick, MD 21702-1201

Phone: 301-846-5387

Fax: 301-846-6178
Email: cragg@dtpax2.ncifcrf.gov

The test results and requests for samples may be submitted to:

Mrs. Erma Brown at <brown@dtpax2.ncifcrf.gov> or at the address and contact numbers given above.

Requests must be copied to Drs. Cragg and Newman at:

<cragg@dtpax2.ncifcrf.gov>; <newman@dtpax2.ncifcrf.gov>

[Annex IV follows]

International Cooperative Biodiversity Group (ICBG) Program

The International Cooperative Biodiversity Groups (ICBG) Program grew out of the realization that drug discovery from natural products, conservation of biodiversity, and sustainable economic development were interrelated goals that might effectively be addressed in interdisciplinary projects that addressed all three goals in an integrated program. An RFA, sponsored by several institutes of the N.I.H., the National Science Foundation, the U.S. Department of Agriculture's Foreign Agricultural Service, and the U.S. Agency for International Development, was first issued in 1992, with a recompetition in 1997. Five-year cooperative grants, administered by the Fogarty International Center of the N.I.H., were awarded to U.S. not-for-profit institutions in partnership with not-for-profit institutions in developing countries having substantial biodiversity, mostly located in the tropics. Additional partners varied, but usually included industrial partners interested in natural products drug discovery or agricultural product development, as well as conservation organizations, foundations, and local communities.

All of the ICBGs are subdivided into associate programs with more focused goals. A group leader (at the U.S. institution receiving the award) is responsible for coordinating activities between all the associate programs. Methods for the collection of natural materials varies among the ICBGs, but most involve collections within the partner developing country sites based on phylogenetic criteria (semi-random) as well as collections directed by ethnomedical information provided by indigenous peoples in the collection areas. Extractions and bioassays are carried out either in the host country, or after shipment to the drug discovery associate programs. Each extract is subjected to multiple bioassays directed toward a mixture of both global diseases (HIV, cancer, etc) as well as tropical diseases endemic to the host country. There are presently 25 therapeutic areas addressed among the current group of 5 ICBGs.

In addition to drug discovery and biodiversity inventory/resource assessment, one major objective of the ICBG Program is to respect the right of individual countries and their peoples to the biological resources and cultural knowledge that they own, while providing incentives to utilize those resources in ways that promote their conservation. While royalties from commercialization of a drug from a natural material discovered through these programs is certainly a major long-term incentive, benefits such as scientific training, capacity building and infrastructure development, and the development of sustainable microenterprises among local peoples, are more immediate and attainable near-term economic goals. To insure equitable sharing of both benefits and processes, the partnerships are required to write legally binding agreements that govern the rights and responsibilities of all partners in these collaborative projects. The FIC and government agencies sponsoring these grants are not parties to these agreements, nor do they dictate the terms specifically. Instead, the FIC has provided guidelines (below) that must be addressed in order to obtain funding. The grants fulfill many of the goals of the Convention on Biological Diversity and present models for benefit sharing and informed consent in the context of collaborative research on genetic resources among international partners.

PRINCIPLES FOR THE TREATMENT OF INTELLECTUAL PROPERTY AND THE SHARING OF BENEFITS ASSOCIATED WITH ICBG SPONSORED RESEARCH.

In developing both research plans and intellectual property agreements it is important that all involved understand the differences between patent coverage and benefit-sharing agreements. While legal protection of the right to commercialize an invention is generally accomplished through the patent system, agreements among collaborators are generally required to designate the terms of partnerships including, among other things, the licensing of an invention and the sharing of and financial benefits that accrue from it.

The conduct of ICBG sponsored research and the agreements among the collaborators must address the following principles to be eligible for funding.

a) Protection of inventions using patents or other legal mechanisms.
Non-profit organizations (including universities) and small business firms retain the rights to any patents resulting from U.S. Government contracts, grants, or Cooperative Agreements. P.L. 96-517, through regulation, extends to businesses of any size the first option to the ownership of rights to inventions made in the performance of a federally-funded contract, grant, or Cooperative Agreement. All group members, therefore, including businesses of any size, might be full partners in the research of the Group and in rights to file patents for any inventions resulting therefrom as specified in the Group's research agreement. This includes communities organized into or represented by an appropriate legal entity.
The specific intellectual property arrangements among the institutions may vary and could include joint patent ownership, exclusive licensing arrangements, etc. Valuable intellectual resources that cannot or will not be patented, such as novel assays or traditional medicinal techniques, may require alternative protection methods such as trade secrets. Applicants are encouraged to develop an arrangement that best suits the particular circumstances of their Group.

b) Clear designation of the rights and responsibilities of all partners.
i. This is principally done through the design of adequate contractual agreements. Agreements should be among all collaborating organizations, whether or not they are recipients of government funds. These may include commercial drug developers, source country and US research institutions, and indigenous and local peoples whose resources, biological or intellectual, are utilized in the research process.
ii. It is strongly recommended that all parties to agreements have separate, competent legal counsel to represent their interests.
iii. Useful contractual tools for the designation of rights and responsibilities include material transfer agreements, research and development agreements, license options agreements, know-how licenses, benefit-sharing agreements, and structured trust funds.
iv. Unless stipulated otherwise in agreements among source country institutions and their collaborators, biological samples and associated information collected under ICBG sponsored research is the property of the source country institutions. The Government retains "march-in" rights to require licensing if the inventing organization(s) fail to pursue development of the process or invention, as described in the "Terms and Conditions of Award".
v. The ownership and compensation terms of first generation and subsequent inventions based upon a lead discovered in ICBG work should be clearly stipulated in agreements.
vi. Agreements should specify that the basic goals of the collaboration include the drug discovery, economic development, and the conservation and sustainable use of biological diversity.
vii. Agreements should also indicate how a sustainable source of materials for follow-up analysis of a lead compound will be developed, and should preferentially use the participating country and/or communities as the first source of raw or processed materials.

c) Sharing of benefits with the appropriate source country parties.
i. Equitable distribution of benefits should accrue to all those who contribute to a commercialized product, whether they are members of the consortium or not, including research institutions and local or indigenous people who provide useful traditional knowledge.

ii. Benefits should flow back to the area in which the source plant, animal or microorganism was found, in such a way that they at least indirectly promote conservation of biological diversity.

iii. The selection of beneficiaries must be justified in terms of program goals, as well as local and international laws and customs.

iv. Benefits should be structured such that they are appropriate to the needs of the communities and the resources of the other collaborators. For example, trust funds managed by a community or community-project board may be more effective in support of conservation and health or education services than cash payments to a single individual or authority. Note that direct cash compensation may even have injurious effects on non-money economies.

v. Ideally, compensation begins flowing early in the collaboration through initial payments, training, equipment or services, to provide near term conservation incentives.

d) Disclosure and consent of indigenous or other local stewards.

i. Arrangements for the use of traditional knowledge or the collection of samples from the lands of local peoples should be based upon full disclosure and informed consent of those peoples.

ii. Indigenous concepts of intellectual property should be respected. If for instance, cooperating indigenous groups, on the basis of religious or other concerns, object to specific uses, widespread dissemination or other treatments of the knowledge they provide, these concerns should be respected in the conduct of ICBG projects.

iii. The process of disclosure and informed consent should be as inclusive and formal as is possible and culturally appropriate. The best practice is the development of written agreements with a community following complete and formal presentation of the Group's goals and methods. Presentations should provide realistic descriptions of the type, amounts and probabilities of benefits as well as any costs or risks that may accrue to cooperating communities.

iv. Arrangements with individuals who cooperate or provide information should be based upon prior community-level agreements whenever possible or appropriate.

e) Information flow that balances proprietary, collaborative and public needs.

i. Agreements and research plans should anticipate the tension between the traditional scientific ethic of public access to information, including publication of results, and the understandable desire of indigenous or commercial partners for confidentiality of information with potential commercial value, pending protection through patenting or other means.

ii. Sharing of information among collaborating institutions should be as complete as possible to maximize efficiency of research and equity in partnerships while recognizing the proprietary concerns of those partners.

f) Respect for and compliance with relevant national and international laws, conventions and other standards.

i. Relevant international conventions such as the U.N. Convention on Biological Diversity and national laws regarding study, use and commercialization of chemical, biological and cultural resources should be observed rigorously in the development of agreements and the conduct of research.

ii. An essential goal of this program is to develop models for sustainable and equitable commercial use of biodiversity-rich ecosystems. As such ICBG research agreements and activities should, wherever possible, go beyond the minimum legal standards regarding international research collaborations, looking to codes of conduct and other standards for guidance.

International Cooperative Biodiversity Groups (1993-2001)

Project Title
U.S. principal institution
Host country/countries

Biodiversity Utilization in Madagascar and Surinam
Virginia Polytechnic Institute and State University
Madagascar, Surinam

Peruvian Medicinal Plant Sources of New Pharmaceuticals
Washington University (St. Louis)
Peru

Chemical Prospecting in a Costa Rican Conservation Area
Cornell University
Costa Rica

Drug Development and Conservation of Biodiversity in West and Central Africa
Walter Reed Army Institute of Research
Cameroon, Nigeria

Bioactive Agents from Dryland Biodiversity of Latin America
University of Arizona
Argentina, Chile, Mexico

Ecologically Guided Bioprospecting in Panama
Smithsonian Tropical Research Institute
Panama

Biodiversity of Vietnam and Laos
University of Illinois at Chicago
Vietnam, Laos

[Annexe V follows]

National Germplasm Resources Laboratory
USDA/ARS, Beltsville, Maryland
11 December 2001

FY2002 GUIDELINES FOR GERMPLASM EXCHANGE PROPOSALS

The United States Department of Agriculture (USDA), Agricultural Research Service (ARS) funds expeditions to arrange germplasm exchanges with foreign genebanks. Germplasm exchange proposals must be supported by the appropriate Crop Germplasm Committee (CGC) for the target plants, recommended by the Plant Germplasm Operations Committee (PGOC) and approved by the ARS Administrator. Germplasm Exchange Proposals may be submitted by any qualified scientist. The Guidelines presented here are for Germplasm Exchange Proposals to be funded during the period October 1, 2001 - September 30, 2002 (Fiscal Year 2002); previous versions are obsolete. The Guidelines are revised annually and may be obtained from the Plant Exchange Office (PEO), Beltsville, Maryland. The format for proposals for plant explorations are presented in a separate document, *The FY2002 Guidelines for Plant Exploration Proposals*.

The format for germplasm exchange proposals is designed to guide prospective travelers through the necessary background study required to obtain the information necessary for sound planning and effective implementation of exchange programs, to fully inform reviewers, and to provide a basis for judging and prioritizing proposals. The format for the project summary (Attachment A) is designed to comply with ARS Directive 281.1 (Extramural Research-Grant Agreements) so that grants can be used to fund expeditions by non-ARS scientists. The policy of the PEO is not to provide funds to cover institutional overhead. When ARS funds an expedition by a non-ARS employee, the expedition is considered to be in the mutual interest of that person's institution and ARS, and a waiver of overhead is warranted. The format requires that the grantee certify that overhead will be waived.

Scientists planning to submit a proposal should first consult Karen Williams in the PEO. The PEO can provide suggestions and assistance with technical matters when preparing a proposal. Exchanges must be made in compliance with the host country's laws governing foreign access to germplasm. Planning for the expedition should involve host country collaborators as early as is possible.

All germplasm obtained from ARS-funded germplasm exchanges is added to the National Plant Germplasm System (NPGS) where it will be curated, evaluated and made available for distribution. Germplasm in the NPGS is available to all bona fide users, public, private and foreign.

The prevention of accidental introduction of noxious weeds, insects, diseases and other organisms into the United States is of utmost concern to ARS. Participants on ARS-supported exchange expeditions are required to closely follow U.S. plant quarantine laws and regulations administered through the USDA Animal and Plant Health Inspection Service (APHIS). Participants must declare all germplasm upon their return to the U.S. The germplasm should be inspected by an APHIS inspector for evidence of insects, disease or weed contamination and treated appropriately, when necessary.

Preparation of proposal: The format for preparing proposals is outlined in Attachment

A. For specific advice on proposal items 16 and 17, consult Maryann Loftus (Telephone: 301-504-5020; Email: mloftus@ars-grin.gov) of the Plant Exchange Office. A scientist submitting a proposal must have the written endorsement for the proposal from the appropriate Crop Germplasm Committee (CGC) or other qualified crop specialists when there is no appropriate CGC. The NPGS curator(s) responsible for the proposed collections must sign a statement (see item 17) to certify that they anticipate having the capacity to curate the collections.

Submission of proposals: Submit the proposal to the Plant Exchange Office **no later than July 1, 2001.**

Review of proposals: Proposals are reviewed by a committee composed of members of the Plant Germplasm Operations Committee (PGOC) and a representative of each of the four NPGS Regional Technical Committees. CGC recommendations are considered by the committee when it reviews proposals for funding. The committee prioritizes acceptable proposals and recommends these for approval by the ARS Administrator.

Notification of funding decision: Scientists will be notified in writing by PEO of the decision regarding funding of their proposal. Scientists whose expeditions are funded will receive instructions on funding arrangements and a checklist for requirements.

Documentation requirements: Each accession must be documented with all data available from the donor. A copy of the data should accompany all germplasm sent to the USDA Plant Germplasm Quarantine Center (Bldg. 580, BARC-East, Beltsville, MD 20705).

Reporting requirements: Within 30 days of completion of the expedition, a summary report (see Attachment B for format) must be submitted to the Plant Exchange Office. Within 60 days of completion of the expedition, a final report must be submitted. **Future proposals by the same participants will not be approved for funding until the final report is received.** The final report should include:

a. Catalog of accessions: a record of all accessions. This may be in electronic form.

b. Narrative report: 3 to 5 single-spaced typewritten pages (more, if necessary). The narrative should be as short as possible and avoid details presented in the catalog. Provide a list of contacts with complete addresses and indicate how they contributed to the expedition and how they might contribute to future expeditions in the same country.

ARS scientists: ARS scientists are required to follow USDA and ARS regulations in obtaining travel authorization, implementing travel, accounting for expenses and submitting a trip report.

Direct requests for further information and submit proposals to:

Karen Williams
Plant Exchange Office
National Germplasm Resources Laboratory
Rm. 402, Bldg. 003, BARC-West
Beltsville, MD 20705-2350
Telephone: 301-504-5421
FAX: 301-504-6305
Email: kwilliams@ars-grin.gov

GERMPLASM EXCHANGE PROPOSAL FORMAT

[The proposal must have a cover page with project title and summary. The following are examples and should be modified as appropriate.]

PROJECT TITLE: EXPEDITION IN [NAME OF STATE(S)/COUNTRY(S] TO EXCHANGE [NAME OF CROP] GERMPLASM FOR CROP IMPROVEMENT.

PROJECT SUMMARY

The [name of Crop Germplasm Committee (CGC), or if no appropriate CGC, name of crop specialist] has determined there is a need for additional [name of crop] germplasm. This germplasm is desired for breeding programs for crop improvement. This germplasm is believed to be available in the collections of [institution(s)] in [country(ies)]. Exchange of this germplasm can only be arranged by a visit to [country(ies)]. This expedition will be made in compliance with [name of country(ies)]'s laws governing foreign access to germplasm. The germplasm will be incorporated into the National Plant Germplasm System where it will be curated on behalf of the U.S. Government and will be available to all qualified scientists/organizations, domestic and foreign, who are eligible to receive it. All germplasm will be shipped or carried to the USDA Plant Germplasm Quarantine Center, Beltsville, Maryland, from which it will be distributed according to policies in effect at time of receipt.

CERTIFICATION

(The leader of each exploration must sign on the signature line of section 1 below. Non-ARS participants must also sign on the signature line of section 2.)

1. I agree to abide by all rules and regulations of host countries concerning access to plant genetic resources and understand that proper permission is required in advance. When the expedition is complete, I will promptly comply with reporting requirements explained in the guidelines. I will provide a summary report, a narrative report, and a catalog of accessions. The catalog will include all information available from the institution from which the material is obtained. I understand that all germplasm obtained from ARS-funded germplasm exchange expeditions will be added to the National Plant Germplasm System (NPGS) where it will be curated on behalf of the U.S. Government.

_____ _____

Signature Date

2. As a non-ARS employee, I agree to the above and certify that I have consulted the appropriate official of my institution who has agreed to waive overhead.

_____ _____

_____ _____

Signature Date

1. Submitted by:
[Name, title, full address, telephone number, fax, and Email (if available).]

2. Objectives:
a. Taxa to be obtained:
b. Specific or general characteristics sought:
c. Use to be made of germplasm obtained:

3. Dates of travel:
[Specify dates and briefly explain why this period is appropriate.]

4. Host country(ies) and institution(s):

5. Suggested participants:
[Identify each suggested participant and explain their qualifications including foreign language capabilities and previous foreign travel experience. Show date and place of birth and passport number for each suggested participant. If a suggested participant does not have a passport, so indicate. If passport has expired, so indicate but provide number of expired passport.]

6. Host country (or other) requirements to obtain permit for export of germplasm:
[Describe requirements and any progress made in requesting and obtaining permits. Describe existing restrictions concerning transfer of genetic resources, including how this effort will be implemented to follow the intent of the International Convention on Biological Diversity. Are any material transfer agreements requested for the exchange of this germplasm?]

7. Justification:
[Explain the need for the germplasm and why the exchange must be arranged in person. Under what conditions are the collections being maintained? Is there reason to believe that the security of the collections is threatened? Note any political factors that may have an impact on the expedition. If none, so state.]

8. Germplasm currently available:
[What germplasm of the target species is now available in U.S. or other foreign collections? Has the Germplasm Resources Information Network (http://www.ars-grin.gov) been consulted? Has that germplasm been used?]

9. CGC or other concurrence:
[Attach a copy of a letter from the appropriate CGC endorsing this expedition. If the target species are not covered by a CGC, letters from other specialists can be substituted. If the expedition is proposed in response to a CGC or other recommendation, so indicate.]

10. Benefits to host country:
[How will the host country benefit from this expedition? Planning should include an assessment of the host country's need for germplasm from NPGS collections. An offer should be made to either bring this germplasm with the traveler or to send it after the conclusion of the expedition. How will the host country benefit from the scientific expertise of the expedition participants?]

11. Currency/exchange rates:

12. Holidays:
[American embassies honor local as well as U.S. holidays. Traveler should be aware of all foreign holidays and, if possible, should avoid travel immediately before, during, and after major holidays.]

13. Supplies and equipment:
To be shipped or carried from U.S.:
By participant(s):
By Plant Exchange Office:
To be obtained in host country:

14. Travel plan:
[How will participants proceed after arrival in the host country? Will the entire itinerary be covered by motor vehicle? If not, will travel by boat, train, plane, etc., be required?]

15. APHIS requirements for import of germplasm:
[Proposal should reflect contact with the USDA APHIS Plant Protection and Quarantine Permit Unit, Riverdale, Maryland (Karen Brady, Telephone: 301-734-5208) regarding any quarantine restrictions and prohibitions for the taxa to be obtained. Consulting the APHIS website (http://www.aphis.usda.gov/ppq/ss/permits/products/indes.shtml) is recommended.]

16. How accessions will be shipped to U.S. or other destination:
[Explain how accessions will be packed and shipped. If the traveler plans to bring the germplasm from abroad to the U.S. by hand or as a part of his/her baggage, authorization from APHIS is required. Coordinate with Maryann Loftus of the Plant Exchange Office.]

17. Disposition of germplasm after arrival in U.S.:
[Proposal should reflect contact with the appropriate crop curator(s) and Maryann Loftus. Ms. Loftus will provide the appropriate contact in the Plant Germplasm Quarantine Office for expeditions resulting in the introduction of germplasm that must be quarantined. Note any special distribution arrangements made for quarantine, propagation, or increase. Have the curator(s) sign the Crop Curator Statement (Attachment A, page 6) to certify

that they anticipate having the capacity to curate the germplasm. Include this statement with your proposal.]

18. Contacts and cooperators:
[Provide name, title, address, etc. for each and indicate how they have contributed or will contribute to the success of the mission.]

19. References consulted:
[If personal communications are cited, attach copy.]

20. Itinerary:
Provide details on time to be spent traveling and visiting the host institution.

[NOTE: Begin item 21 on a new page.]

21. Budget estimate:
[Show best estimate of cost for each participant for each budget item (air fare, excess baggage, per diem, vehicle rental, gasoline, driver, interpreter, supplies, etc.) for which the cost is $100 or more. For air fare, cite source and date of quote. For per diem, do not exceed official U.S. government rates. Salaries of participating scientists cannot be included. Indicate all sources of funds (USDA, State, or other).]

22. Attach vitae:
[Vitae are required to comply with the following requirement of Directive 281.1. "Vitae of key personnel to include principal investigator(s), senior associate(s), and other senior professionals should be provided in order to assist evaluators to assess the competence and experience of the project staff." Limit publications section to the last five years.]

CROP CURATOR STATEMENT

I have been in contact with [fill in traveler's name] concerning the planned expedition to [fill in country or region]. I expect to have the capacity to curate the collections anticipated from this expedition.

Comments:

Curator's name	Location	Crop(s)

Signature	Date

ATTACHMENT B

GERMPLASM EXCHANGE REPORT
(Summary, not to exceed 1 page)

Participants:
(Name, title, full address, telephone number, FAX)

Countries and institutions visited:

Dates of travel:

Objectives:

Accomplishments:

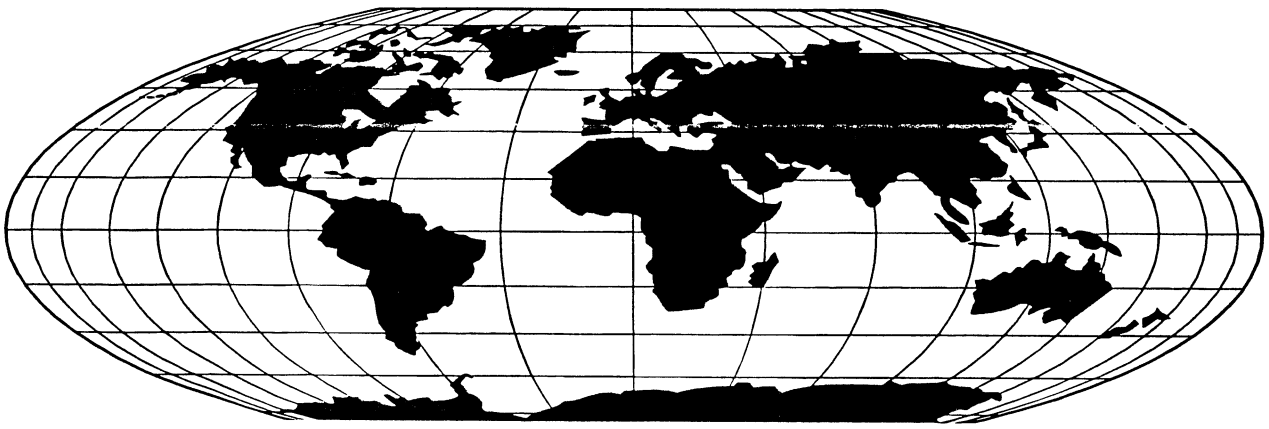
National Germplasm Resources Laboratory
USDA/ARS, Beltsville, Maryland
11 December 2001

FY2002 GUIDELINES FOR PLANT EXPLORATION PROPOSALS

The United States Department of Agriculture (USDA), Agricultural Research Service (ARS) funds foreign and domestic plant explorations to acquire plant germplasm for inclusion in the U.S. National Plant Germplasm System. Plant exploration proposals must be supported by the appropriate Crop Germplasm Committee (CGC), or other qualified crop specialists when there is no appropriate CGC, Proposals are recommended for funding by the Plant Germplasm Operations Committee (PGOC) and approved by the ARS National Program Staff. Plant Exploration Proposals may be submitted by any qualified scientist. The Guidelines presented here are for proposals to be funded during the period October 1, 2001 - September 30, 2002 (Fiscal Year 2002); previous versions are obsolete. The Guidelines for Plant Exploration Proposals are revised annually and may be obtained from the Plant Exchange Office (PEO), Beltsville, Maryland.

The format for plant exploration proposals is designed to guide prospective explorers through the necessary background study required to obtain the information necessary for sound planning and effective implementation of field programs, to fully inform reviewers, and to provide a basis for judging and prioritizing proposals. The format for the project summary (Attachment A) is designed to comply with ARS Directive 281.1 (Extramural Research-Grant Agreements) so that grants can be used to fund explorations by non-ARS scientists. The policy of the PEO is not to provide funds to cover institutional overhead. When ARS funds an exploration by a non-ARS employee, the exploration is considered to be in the mutual interest of that person's institution and ARS, and a waiver of overhead is warranted. The format requires that the grantee certify that overhead will be waived. The format also requires certification that the collector will provide complete "passport" data, including latitude and longitude, for each collection.

Scientists planning to submit a proposal are advised to first consult Karen Williams in the PEO. The PEO can provide suggestions and assistance with technical matters when preparing a proposal.



Participants on foreign ARS-supported explorations are required to follow the Guidelines for Conduct of Foreign Plant Explorations (Attachment B). Participants should also be aware of the voluntary FAO Code of Conduct for Plant Germplasm Collecting and Transfer, copies of which may be obtained from PEO upon request. Explorations must be made in compliance with the host country's laws governing access to germplasm. Regulations in different countries vary significantly. Permission for access to germplasm must be obtained from the host country authority designated by the national government. Permission may also be required by regional, state or individual landholding authorities. Scientists submitting proposals are strongly encouraged to consult with the PEO regarding access issues. The PEO often assists with communicating about access issues with host country governments, and agreements governing access to germplasm are negotiated by the PEO.

Laws in some countries require benefit-sharing beyond that routinely associated with plant explorations in order to obtain access to plant genetic resources. Depending on the situation in the host country, a limited amount of funds may be requested in the budget for additional non-monetary benefits. These expenditures should increase the country's capacity to conserve plant genetic resources and may include supplies, training of host country scientists, and workshops conducted by exploration participants. The host country authority for access will determine the acceptability of the non-monetary benefits. Please consult with the PEO before including benefits of this type in your proposal.

All germplasm obtained from ARS-funded plant explorations is added to the National Plant Germplasm System (NPGS) where it will be curated, evaluated and made available for distribution. Germplasm in the NPGS is available to all bona fide users, public, private and foreign. Germplasm collected on ARS-funded explorations will be distributed to non-NPGS participants after deposition in the NPGS, and will be subject to the conditions of any agreements signed with the host country.

The prevention of accidental introduction of noxious weeds, insects, diseases and other organisms into the United States is of utmost concern to ARS. Participants on ARS-supported explorations are required to closely follow U.S. plant quarantine laws and regulations administered through the USDA Animal and Plant Health Inspection Service (APHIS). Participants must declare all germplasm upon their return to the U.S. The germplasm should be inspected by an APHIS inspector for evidence of insects, disease or weed contamination and treated appropriately, when necessary.

A separate proposal format entitled "Guidelines for Germplasm Exchange Proposals" is available from the PEO for proposals involving expeditions to exchange germplasm with foreign genebanks when the expedition plans do not include exploration.

Preparation of proposal: The format for preparing proposals is outlined in Attachment A. For specific advice on proposal items 19 and 20, consult Maryann Loftus (Telephone: 301-504-5020; Email: mloftus@ars-grin.gov) of the PEO. Request a written endorsement for the proposal from the appropriate Crop Germplasm Committee (CGC), or other qualified crop specialists when there is no appropriate CGC. The NPGS curator(s) responsible for the proposed collections must sign a statement (see item 20) to certify that they anticipate having the capacity to curate the collections.

Draft proposal: Because the assistance of PEO is frequently required in acquiring host country approvals for explorations, please submit a draft proposal to the PEO by April 15, 2001. The draft should include items 1, 2, 3, 4, 5, 6, and 7 (brief explanation of need). Early notification will allow the PEO to assist with meeting host country requirements for access to germplasm and with negotiating terms.

Final submission of proposals: Submit the proposal to the PEO **no later than July 1, 2001**. This deadline may be waived to permit response to real emergencies.

Review of proposals: Proposals are reviewed by a committee composed of members of the Plant Germplasm Operations Committee (PGOC) and a representative of each of the four NPGS Regional Technical Committees. CGC recommendations are considered by the committee when it reviews proposals for funding. The committee prioritizes acceptable proposals and recommends these for approval by the ARS Administrator.

Notification of funding decision: Scientists will be notified in writing by PEO of the decision regarding funding of their proposal. This notification may occur as late as December, 2001. Scientists whose explorations are funded will receive instructions on funding arrangements, a checklist for requirements, and the FAO report forms for assessment of genetic erosion in natural habitats. If evidence of genetic erosion is observed in the field, an FAO report form should be completed in collaboration with host country scientists and submitted to FAO by the host country government. The FAO report forms for assessment of genetic erosion of wild crop relatives is available on the Internet at http://apps2.fao.org/wiews/ews_part2.thtml. The FAO report form for assessment of genetic erosion of local varieties is available on the Internet at http://apps2.fao.org/wiews/ews_part3.thtml.

Documentation requirements: Each collection must be documented with sufficient data. A sample data collection sheet is attached (Attachment C). Explorers are urged to develop their own similar data collection formats tailored to the target crop species. The PEO can provide help in modifying or preparing data collections forms for specific expeditions.

It is important that collectors carefully record locality data (including latitude, longitude, and elevation), associated vegetation, habitat description, plant characteristics and local uses of the plant for all germplasm. Use of Global Positioning System (GPS) devices for determining accurate longitude and latitude and altimeters for accurate altitude is required. Such devices are available on loan from the PEO. A copy of the data should accompany all germplasm sent to the USDA Plant Germplasm Quarantine Center (Bldg. 580, BARC-East, Beltsville, MD 20705).

Collectors are requested to use a identification system for germplasm samples that combines characters and numbers. Characters can refer to the collectors' initials, the country in which the exploration is conducted, or the species collected. This will greatly facilitate the tracking of accessions in the Germplasm Resources Information Network (GRIN) database.
A herbarium voucher specimen should be prepared for any collection which cannot be identified authoritatively in the field, for a collection which possesses uncharacteristic

morphological traits, and especially for all collections of wild relatives of crop plants. At least one duplicate herbarium voucher should be deposited in an internationally recognized herbarium. It is recommended that voucher specimens of woody landscape species be deposited with the U.S. National Arboretum Herbarium (contact Kevin Conrad, Telephone: 202-245-4513).

Reporting requirements: Within 30 days of completion of the exploration, a summary report (see Attachment D for format) must be submitted to the PEO. Within 60 days of completion of the exploration, a final report is required. **Future exploration proposals by the same participants will not be approved for funding until the final report is received.** The final report should include:

a. Catalog of collections: a record of all collections including all passport data. This may be in electronic form.

b. Narrative report: 3 to 5 single-spaced pages (more, if necessary). Include significant observations likely to be of interest to germplasm users, or other explorers who may visit the same areas in the future. Provide a list of contacts (domestic and foreign) with complete addresses and indicate how they contributed to the mission and how they might contribute to future missions in the same country.

c. Page-size map showing itinerary: identify principal points on the itinerary and most important collection sites.

d. Information on any threats to genetic resources in the area visited.

ARS scientists: ARS scientists are required to follow USDA and ARS regulations in obtaining travel authorization, implementing travel, accounting for expenses and submitting a trip report.

Requests for further information and plant exploration proposals should be directed to:

Karen Williams
Plant Exchange Office
National Germplasm Resources Laboratory
Rm. 402, Bldg. 003, BARC-West
Beltsville, MD 20705-2350
Telephone: 301-504-5421
FAX: 301-504-6305
Email: kwilliams@ars-grin.gov

PLANT EXPLORATION PROPOSAL FORMAT

The proposal must have a cover page with project title and summary. The following is an example and should be modified as appropriate.

PROJECT TITLE: PLANT EXPLORATION IN [NAME OF STATE(S)/COUNTRY(S] TO COLLECT [NAME OF CROP] GERMPLASM FOR CROP IMPROVEMENT.

PROJECT SUMMARY

The [name of Crop Germplasm Committee (CGC), or if no appropriate CGC, name of crop specialist] has determined there is a need for additional [name of crop] germplasm from [state(s)/country(s)]. This germplasm is desired for breeding programs for crop improvement, does not exist in other germplasm collections and can only be obtained by collection. Additionally, [list specific threats] threaten its continued existence if not placed in an *ex situ* collection. Explorations will be made in compliance with [name of country(ies)]'s laws governing foreign access to germplasm. After being deposited in a designated genebank in [country], samples of the germplasm will be incorporated into the National Plant Germplasm System where it will be curated on behalf of the U.S. Government and will be available to all qualified scientists/organizations, domestic and foreign, who are eligible to receive it. Germplasm will be collected as seeds, bulbs, cuttings, or other propagules. When possible, collections will be documented with voucher herbarium specimens. All collections will be documented with complete "passport" data (description, locality of collection, including latitude and longitude, etc.). All germplasm will be shipped or carried to the USDA Plant Germplasm Quarantine Center, Beltsville, Maryland, from which it will be distributed according to policies in effect at time of receipt.

CERTIFICATION

(The leader of each exploration must sign on the signature line of section 1 below. Non-ARS participants must also sign on the signature line of section 2.)

1. For foreign plant explorations, I certify that I have read and will abide by the Guidelines for Conduct of Foreign Plant Explorations. I agree to abide by all rules and regulations of host countries concerning collection of plant genetic resources and understand that proper permission is required in advance of collection.

   I will **promptly** comply with reporting requirements explained in the Guidelines for Plant Exploration Proposals. I will provide a summary report, a narrative report, information on genetic erosion in the region visited and a catalog of collections. The catalog will include collector's name and number, plant name, collection locality, **including latitude, longitude and elevation**, and **appropriate descriptive information** (of plant and environment), etc.

   I understand that all germplasm obtained from ARS-funded plant explorations will be added to the National Plant Germplasm System (NPGS) where it will be curated on behalf of the U.S. Government.

_____ _____
Signature Date

2. As a non-ARS employee, I agree to the above and certify that I have consulted the appropriate official of my institution who has agreed to waive overhead.

_____ _____
Signature Date

1. Submitted by:
[Name, title, full address, telephone number, fax, and email.]

2. Objectives:
a. Taxa to be collected:
b. Specific or general characteristics sought:
c. Use to be made of germplasm collected:

3. Dates of travel:
[Specify dates and briefly explain why this period is appropriate.]

4. Host country(s) or state(s):
[If proposal is for collecting in a foreign country indicate, as specifically as possible, the part of that country that will be visited (i.e., section of the country, states, provinces).]

5. Suggested participants:
[Identify each suggested participant and explain their qualifications including foreign language capabilities and previous foreign travel experience. If this proposal is for exploration in a foreign area, show date and place of birth and passport number for each suggested participant. The inclusion of more than two U.S. scientists requires justification.]

6. Host country (or state(s) or other) requirements to obtain collection permit and permit for export of germplasm:
[For foreign plant explorations, the appropriate procedure for obtaining access to plant genetic resources varies widely among countries. The PEO will assist in identifying host country authorities for access to germplasm. Depending on the regulations in the host country, the PEO may assume responsibility for communicating with host country authorities regarding access. Documentation of host country approval for the exploration will be required before funding is provided. In this section of the proposal, identify the authority in the host country, describe requirements (such as application forms) for obtaining permission for collection of germplasm, and give details on any progress made in requesting and obtaining permits.

For domestic plant explorations, plant collection permits must be obtained from landholders, both public and private. Landholding agencies, including federal agencies such as the National Park Service, may require considerable time for processing applications.]

7. Justification:
[Explain the need for collection and why the proposed field collection area will meet that need. Consider the abundance and distribution of the species to be collected; append distribution maps showing their known distribution. Statements on genetic erosion should be documented. The appropriate Crop Germplasm Committee should have identified the target germplasm as a priority

for acquisition. Note any political factors which may have an impact on the

[End of Annex V and of document]