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AGENCY FOR INTERNATIONAL DEVELOPMENT

UNITED STATES AID MISSION TO PERU

C/O AMERICAN EMBASSY

LIMA, 1 PERU

TELEPHONE: 286200

CABLE: USAID/LIMA

June 10, 1986

Dr. Alberto Cazorla  
Rector of the University  
Universidad Peruana Cayetano Heredia  
Honorio Delgado 932  
San Martín de Porres  
Lima.-

Subject: UPCH - The Usefulness of Traditional Peruvian Remedies for  
Diarrhea and Parasites. Project No. 936-5542

Dear Dr. Cazorla:

Pursuant to the authority contained in the Foreign Assistance Act of 1961, as amended, the Agency for International Development (hereinafter referred to as "AID" or "Grantor") hereby grants to the Universidad Peruana Cayetano Heredia (hereinafter referred to as "UPCH" or "Grantee") the amount of US\$150,000 (the "Grant") to carry out a research project entitled, "The Usefulness of Traditional Peruvian Remedies for Diarrhea and Parasites," as described in Attachment 1, the Schedule of this Grant, and Attachment 2, entitled Program Description.

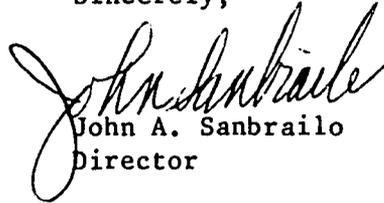
This Grant is effective, and obligation is made, as of the date of this letter and shall apply to commitments made by the Grantee in furtherance of program objectives during the period beginning with the effective date of the project and ending December 31, 1988. All reporting and financial liquidations are to be completed by that date.

This Grant is made to UPCH on condition that the funds will be administered in accordance with the terms and conditions as set forth in Attachment 1, entitled the Schedule, Attachment 2, entitled Program Description, Attachment 3, entitled Mandatory Standard Provisions, and Attachment 4, entitled Optional Standard Provisions.

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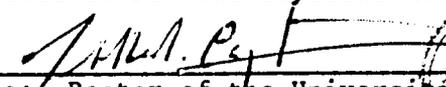
Please sign all six (6) copies of this Agreement to acknowledge your acceptance of the Grant and the conditions herein established. Five copies should be returned to AID.

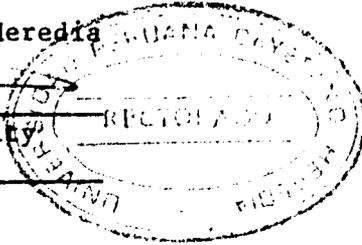
Sincerely,

  
John A. Sanbrailo  
Director

ACKNOWLEDGED:

Universidad Peruana Cayetano Heredia

By   
Title: Rector of the University  
Date: 6.17.86



ATTACHMENTS:

1. Schedule
2. Program Description
3. Mandatory Standard Provisions
4. Optional Standard Provisions

FISCAL DATA:

Appropriation: 72-1161021-6  
Budget allotment Codes: DDAA-86-10600-DG11 (646-36-099-00-19-61)  
Project No.: 936-5542  
Obligation No.: 6361321  
Total Estimated Amount: \$150,000  
Total Obligated Amount: \$150,000  
Funding Source: AID/Washington

SCHEDULE

A. Purpose of the Grant

The purpose of this Grant is to provide support for a research activity to be carried out by the Universidad Peruana Cayetano Heredia. The activity, entitled "The Usefulness of Traditional Peruvian Remedies for Diarrhea and Parasites," will evaluate the efficacy of traditional herbal remedies used in Peru for these disorders. See Attachment 2, Program Description, for a fuller description.

B. The Grantee

The recipient institution for the Grant is UPCH. The Principal Investigator for project activities is Dr. Raúl León Barúa, M.D., D.M. Gastroenterologist, Professor of Medicine at UPCH.

C. Period of the Grant

The effective date of this Grant is the day of its signature. The expiration date of this Grant is December 31, 1988.

D. Approved Project Proposal

The approved Project Proposal consists of the original proposal submitted on August 9, 1985 by Dr. Raúl León Barúa, UPCH, as revised by AID/SCI's letter of November 26, 1985, approving the proposal, with provisos, and the response thereto, a letter to AID/SCI from Dr. Raúl León Barúa dated January 7, 1986.

E. Amount of Grant and Payment

1. AID hereby obligates the amount of \$150,000 for the purposes of this Grant. This represents the maximum total contribution of AID to the project. The Grantee assumes the responsibility to secure any additional resources that might be required to complete project objectives.

2. Payment shall be made to the Grantee in accordance with procedures set forth in Attachment 4 - Optional Standard Provision 1, entitled "Payment-Periodic Advance" and in accordance with Section G, Financial Plan. Payment shall be made on a quarterly basis.

F. Required Accounting Records

Grantee hereby agrees to establish a separate banking account and to keep separate accounting records for the funds received under this Grant in accordance with, and as required by, Optional Standard Provisions, 1 (a) of Attachment 4.

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G. Financial Plan

The following constitutes the Financial Plan for this Grant. It includes local cost financed items, as authorized, as well as some equipment and supplies to be purchased abroad and international travel. Procurement of goods and services shall be implemented in accordance with Optional Standard Provisions 5, 6, 7 and 8 of Attachment No. 4. Revisions to the Grant Budget shall be made in accordance with Mandatory Standard Provision No. 4 (see Attachment 3) entitled "Revision of Grant Budget." Transfers among AID financed categories in the Grant Budget in excess of 15% shall require the written approval of AID.

Grant Budget  
(in U.S. Dollars)

	<u>Year 1</u>	<u>Year 2</u>	<u>Total AID</u>	<u>UPCH Contribution</u>
1. Salaries			104,512	9,250
a. Principal Investigator (1)	5,400	5,400		
b. Co-Princip. Investigators (2)	28,056 *	28,056 *		
c. Johns Hopkins Consultant (1)	500 *	500 *		
d. Investigators (2)	3,900	3,900		
e. Technicians (4)	9,000	9,000		
f. Students/Assistants (3)	4,000	4,000		
g. Secretary (1)	1,400	1,400		
2. Research Facilities				12,000
3. Equipment and Supplies			22,300	36,500
a. U.S. Purchase	15,300 *	6,250 *		
b. Local Purchase	250	500		
4. Renovation of UPCH Animal Facilities	3,300	--	3,300	
5. Purchase and Feeding of Lab Animals	1,000	1,000	2,000	
6. Travel			2,900	
a. International	1,200 *	1,200 *		
b. Local	250	250		
7. Miscellaneous Administrative Costs	7,399	6,195	13,594	
8. Contingency	667	727	1,394	
GRAND TOTALS	\$81,622	\$68,378	\$150,000 =====	\$57,750 =====

Summary

AID Contribution	\$150,000 (72%)
UPCH Contribution	<u>57,750 (28%)</u>
TOTAL PROJECT	\$207,750 (100%)

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Notes

1. See Approved Project Proposal for more detail on specific types of personnel included in (1) above and percentages of time they will provide to Project.
2. Starred (\*) AID figures above represent U.S. Dollar costs, totaling \$81,062. All other figures represent local cost items, totaling \$68,938.
3. Equipment to be procured abroad (3a above) includes a laboratory freezer (Revco or equal) and a "Sonicator." These items, and most lab supplies (tissue cult, helminthic cultures, plasticware cultures, instruments and glassware) will be procured and shipped with the assistance of Johns Hopkins University in Baltimore.
4. Details on UPCH contribution are in USAID project files.

H. Reporting and Evaluation

1. Interim progress reports are required from the Principal Investigator every six months except for the last six month period, at the end of which, within 60 days, a final report is to be submitted. All reports will be given to the Chief of the Health and Nutrition Division, USAID/Lima, who shall be the AID Project Manager. Submission shall be in accordance with the time schedules indicated below. Five (5) copies of all Interim Progress Reports are to be provided to USAID/Peru, three of which will be transmitted to AID/SCI for distribution in AID/Washington to the AID/SCI files, the AID Reference Center and the technical backstop officer.

The objective of the Interim Progress Reports is to keep the AID Project Manager and AID/SCI informed that the research is proceeding in accordance with this Grant Agreement and to document any changes in the research plan or in key dates or benchmarks. The first Interim Report should report any revisions in key dates based on any revised research schedule and should request administrative changes which may be required in the project. All reports should place emphasis on announcing substantive scientific developments as they occur.

Interim Progress Reports should be submitted no later than 30 days following the periods ending December 31, 1986, June 30, 1987, December 31, 1987 and June 30, 1988. These and the Final Report, may be submitted in the Spanish language if accompanied by an adequate English language summary.

2. The Final Report will be prepared by the Principal Investigator, to be submitted by the Grantee to the USAID/Peru Project Manager for transmittal to AID/SCI. It must be submitted prior to December 31, 1988. Six (6) copies shall be given to USAID, four of which shall be transmitted to AID/SCI for AID/Washington distribution. The Final Report shall be sufficiently detailed to substantiate research findings and to permit a scientific evaluation of the research. The Principal Investigator is encouraged to share the draft report with the AID Project Manager for comment prior to final submission.

3. Quarterly financial reports, setting forth amounts of funds received, spent and liquidated in accordance with the Grant Budget and its budget categories, shall be submitted by the Grantee to the AID Project Manager in five (5) copies, three of which shall be forwarded promptly to AID/SCI.

4. Project Evaluation will be based on an analysis of the Final Report and other information deemed appropriate by the AID Project Manager. AID/SCI is prepared to assist in the analysis of the Final Report. The Evaluation is to be completed by the AID Project Manager within 90 days after the submission by the Grantee of the Final Report and is to be forwarded promptly to AID/SCI. AID/SCI will thereafter prepare the Project Completion Report, drawing upon the Project Evaluation and all other reports submitted by the Principal Investigator and Grantee.

I. AID/SCI Technical Backstopping

Upon request by USAID/Peru, AID/SCI will arrange for technical backstopping support on technical issues, including assessment of interim and final reports. The AID/SCI Project Monitoring System will keep track of key action dates and remind the Grantee and USAID Project Manager 30 days in advance of when these actions fall due.

J. Special Provisions

1. The following Optional Standard Provisions (AID 1420-54) apply to this Grant: Sections 1, 3, 4, 5, 6, 7, 8, 17 and 20.

## PROGRAM DESCRIPTION

### A. Purpose and Nature of the Research

This research project will evaluate traditional herbal remedies used in Peru for the treatment of diarrhea and parasites.

The nature of the research is presented, in detailed form, in the Project Proposal (AID/SCI Proposal No. 6.345) submitted on August 9, 1985 by Dr. Raúl León Barúa of UPCH, as modified by AID/SCI provisos in a letter dated November 26, 1985, and a responding letter from Dr. León Barúa, dated January 7, 1986.

In summary, investigators, working in the research facilities of UPCH in Lima, will test at least 10 herbal remedies for diarrhea and 5 for parasites in animal models. The popular names of those to be tested for anti-diarrheal efficacy are: higuera, grenado, huitoc, mullacka, membrillero, tara, zarza, llanten mayor, setosa, hierba buena and ratania. For countering parasites: oje, paicco, caiabacera, helecho macho and papayo.

The use of animal models, instead of human clinical trials, will permit the screening of significantly larger numbers of herbal remedies, more precise calculation of effective minimum doses, the identification of active ingredients in the more effective remedies, determination of degree of toxicity (if any), and the use of invasive methods to detect side effects.

Inasmuch as diarrhea and parasites constitute two of the major causes of death and debilitating illness in Peruvian children, the results of this research could be of considerable importance. Significant numbers of Peruvian mothers rely on these traditional herbal remedies, found in every marketplace. To the extent that these remedies can be endorsed, after study, they provide an inexpensive, readily available product, already highly acceptable to the population. It is equally important to know which ones are ineffective, too toxic, or have undesirable side effects.

### B. Specific Research Objectives

- To determine the efficacy of anti-diarrheal herbal remedies in inhibiting intestinal secretion and diarrhea in animal models;
- To determine the mechanism of action of anti-diarrheal compounds using tissue culture assays;
- To examine efficacy of herbal remedies for helminthic infections (parasites) in animal models;
- To initiate studies for the isolation of the active ingredients.

### C. Project Implementation and Responsibilities

This is a two year research project to be carried out at UPCH. The Principal Investigator is Dr. León Barúa, Gastroenterologist and Professor of

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Medicine at UPCH. In addition to directing the research, he will be responsible for meeting the reporting requirements set forth in Section H of the Schedule (Attachment 1). Dr. León Barúa will be assisted by two other UPCH investigators, Dr. Jorge Naranjo, head of the Microbiology Department, and Dr. Luis Alfredo Hu, Parasitologist. Johns Hopkins University will provide two Co-Principal Investigators, Drs. Robert Gilman and William Spira, both now Visiting Professors at UPCH, and a consultant, Dr. R. Bradley Sack.

The tests to be carried out in animal models are complex and will not be described here. They are described in detail in the Approved Project Proposal. It is noted that a large number of animals will be required for research purposes, for example, about 425 rabbits, 72 pigs and 500 mice. For this reason, the project includes funds for animals and feed, as well as for renovation and expansion of facilities at UPCH.

The AID Project Manager will be the Chief of the Health and Nutrition Division of USAID/Peru. She will receive and forward reports, make site visits, act in liaison between the research investigators and AID/SCI and prepare and forward the project's Evaluation Report to AID/SCI. AID/SCI will provide, upon request of the AID Project Manager, backstopping support on technical issues, if required, including the assessment of reports, and will prepare the Project Completion Report.



AGENCY FOR INTERNATIONAL DEVELOPMENT

UNITED STATES AID MISSION TO PERU

C/O AMERICAN EMBASSY

LIMA, 1 PERU

TELEPHONE 333200

CABLE: USAID/LIMA

December 29, 1987

Dr. Alberto Cazorla  
Rector of the University  
Universidad Peruana Cayetano Heredia  
Honorio Delgado 932  
San Martín de Porres  
Lima

Subject: UPCH - The Usefulness of Traditional Peruvian Remedies for Diarrhea  
and Parasites. Project No. 936-5542. Amendment No. One

Dear Dr. Cazorla:

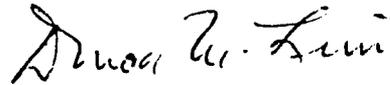
We acknowledge receipt of your letter dated November 12, 1987, in which you request a revision of the Grant Budget of the Letter of Agreement between Universidad Peruana Cayetano Heredia (UPCH) and USAID/Peru signed on June 17, 1986.

We are pleased to accept this request in view of the reasons set forth in Dr. León Barua's letter, Co-Principal Investigator for the subject project. Consequently, the Letter of Agreement dated June 10, 1986 is amended as follows:

1. In Attachment 1, Schedule, Section G, Financial Plan, delete the Grant Budget found on page 3 in its entirety and substitute in lieu thereof the new Grant Budget provided herewith.
2. All other provisions of the Grant, as amended, remain unchanged.

Please acknowledge your acceptance of the above by signing all six (6) copies of this Letter amendment. Five copies should be returned to A.I.D.

Sincerely yours,



Donor M. Lion  
Director

ACKNOWLEDGED:

Universidad Peruana Cayetano Heredia

By :   
Dr. Alberto Cazorla

Title : Rector of the University

Date : January 7, 1988

Grant Budget  
(in U.S. Dollars)

<u>AID</u>	<u>Year 1</u>	<u>REVISED</u> <u>Year 1</u>	<u>Year 2</u>	<u>REVISED</u> <u>Year 2</u>	<u>UPCH</u> <u>Contribution</u>
1. Salaries					9,250
a. Principal Investigator (1)	5,400	5,400	5,400	5,400	
b. Co-Princip. Investigators (2)	28,056*	28,056*	28,056*	28,056*	
c. Johns Hopkins Consultant(1)	500*	500*	500*	500*	
d. Investigators (2)	3,900	3,900	3,900	3,900	
e. Technicians (4)	9,000	9,000	9,000	9,000	
f. Students/Assistants (3)	4,000	4,000	4,000	4,000	
g. Secretary (1)	1,400	3,540	1,400	3,540	
2. Research Facilities					12,000
3. Equipment and Supplies					36,500
a. U.S. Purchase	15,300*	15,300*	6,250*	6,250*	
b. Local Purchase	250	250	500	250	
4. Renovation of UPCH Animal Facilities	3,300	2,800	--	--	
5. Purchase and Feeding of Lab Animals	1,000	1,500	1,000	1,250	
6. Travel					
a. International	1,200*	1,200*	1,200*	1,200*	
b. Local	250	250	250	250	
7. Miscellaneous Administrative Costs	7,399	5,259	6,195	4,055	
8. Contingency	667	667	727	727	
GRAND TOTALS	<u>81,622</u>	<u>81,622</u>	<u>68,378</u>	<u>68,378</u>	<u>57,750</u>

Summary:

AID Contribution	\$150,000 (72%)
UPCH Contribution	<u>\$ 57,750 (28%)</u>
TOTAL PROJECT	\$207,750 (100%)

\* US\$ costs

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Notes

1. See Approved Project Proposal for more detail on specific types of personnel included in (1) above and percentages of time they will provide to Project.
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4. Details on UPCH contribution are in USAID project files.

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