

News: NACS funding

Professor Louis R. Barrows and his collaborators Michael R. Franklin (University of Utah), Osia Gideon, Teatulo K. Matainaho, Pius Piskaut and Prem P. Rai are pleased to announce receipt of a Papua New Guinea National Aids Council Secretariat HIV research grant. The proposal entitled "Do PNG Traditional Medicines Counteract or Augment Anti-Retroviral Therapy in People Living with AIDS?" will address the question of whether the Papua New Guinea (PNG) Ministry of Health's National Policy on Traditional Medicine (2007) will impede one of the most successful global intervention practices against AIDS, namely, the provision of Anti-Retroviral Therapy (ART) to people living with HIV. The work will provide research based evidence on whether the most commonly used herbal preparations in PNG antagonize (or augment) ART. Specifically, 1) the most commonly used medicinal plants in PNG will be identified using the traditional medicines database and literature available at UPNG, 2) these plants will be collected and their identity confirmed by staff at the Univ. Papua New Guinea (UPNG) N.C.D. herbarium, 3) the plants will be extracted in the Bioassay Lab at UPNG School of Medicine and Health Sciences, 4) the extracts will be tested at the Univ. of Utah, for the ability to antagonize or induce the metabolism of ART drugs using purified and/or expressed cloned human phase I metabolism enzymes, and 5) the plants will be tested at the Univ. of Utah, for antagonism or synergism with ART in HIV infected human T-cells in culture and for cytotoxicity.

The greatest success in combating AIDS in developing countries has been achieved when the ABC (Abstinence, Be faithful and use Condoms) awareness program has been used in conjunction with the provision of ART to AIDS patients. The World Health Organization (WHO) launched its "3 by 5" AIDS intervention program in 2003, with the goal of treating 3 million people in low and middle-income countries with ART by 2005. In spite of its shortcomings, the drug provision



13th May 2010

Our Ref: RES 10 COM 003

Professor L. Barrows
University of Utah
Department of Pharmacology and Toxicology,
30 S. 2000 E., Salt Lake City
USA 84112

Dear Professor Barrows

SUBJECT: RES10 COM 003. Do traditional medicines counteract or Augment Anti-retroviral therapy in people living with HIV?

I write to inform that the NACS Research Co-ordination Unit, Research Advisory Committee and AusAID have thoughtfully considered your response to the reviewer's comments and the amendments to your proposal. We are pleased to advise you that your proposal has been approved for funding under the Commissioned Study program. Congratulations.

JTA International (Implementing Service Provider for PNG-Australia HIV and AIDS Program) will be contacting you shortly to finalize the contract for the research project. Over the course of your project JTA International will manage the financial aspect of the research and the Research Co-ordination Unit of the National Aids Council Secretariat will monitor project and recommend the release of tranches upon receipt of progress reports. Research capacity strengthening is an important part of the study and we look forward to the implementation of this component of the project. Please liaise with local co-PIs about possible funding arrangements with UPNG.

If you have any questions or queries, please do not hesitate to contact Dr. Wilfred Kaleva on telephone (675) 7120027 or email: w.kaleva@nacs.org.pg directly.

I look forward to this new partnership and to working together with you.

Thank you,

Yours faithfully,

Mr. Wilfred Kaleva

Mr. Wilfred Kaleva CSM, MBE
Director - National Aids Council Secretariat

policy is a tremendous success globally, increasing coverage of AIDS victims from 5% in 2003 to 48% in 2008, greatly extending life, decreasing the number of orphans, increasing economic productivity and suppressing disease spread. In PNG, the National Strategic Plan on HIV/AIDS for 2004–2008 promoted this strategy and aimed to make antiretroviral therapy available to 25% of the infected population by 2008, with the aim of providing antiretroviral therapy to more into the future. Unfortunately, some estimates project that there are now more than 120,000 people living with HIV in PNG, the majority of whom reside in rural locations at a distance from convenient “Western” health care. Obviously, this makes the goal of serving 25% of the infected population more difficult.

Complicating the successful intervention strategy of providing people living with HIV with ART is the PNG Ministry of Health’s recent National Policy on Traditional Medicines, 2007, which promotes herbal medicine use and its incorporation into the national healthcare formulary. The complication arises from the widely documented, in several different international settings, antagonism of ART by many herbal medicines. It is estimated that 80% of Papua New Guineans regularly use herbal medicines for all manner of infectious disease and health promotion. Some herbal preparations are even used specifically to treat HIV. Although there are no data for PNG yet, it is likely that people in PNG receiving ART continue their use of traditional medicines, as has been shown for ART recipients in other countries. Most of these patients use herbal medicines with little regard for the possible adverse effects such use can have on ART efficacy. The research proposed here will determine which, if any, of the most commonly used medicinal plants in PNG can antagonize (or augment) ART.

The most extensive studies of medicinal plant use in PNG were published over the career of Dean D.K. Holdsworth, UPNG. These are archived *in toto* at UPNG; as is other medicinal plant work conducted by PNG staff. These literature resources, and other summaries (e.g., those by Rai, Powell, and Miller), provide valuable comparative information that is used to complement data being collected in the Traditional Medicines Database.

The Traditional Medicines Database was developed by researchers in the Disciplines of Pharmacy, Pharmacology and Biology (Herbarium Staff) at UPNG in an effort to document and preserve ethnomedicinal information on plants. The National Health Plan of PNG, 2001-2010, adopted by the National Department of Health, created a Traditional Medicines Working Group to

assist in the development of traditional medicines in the country. As an outcome of this early work the UPNG group (with WHO help) initiated a country-wide survey on traditional medicine practice, the collection of medicinal plant voucher samples, and developed the database.

This database is now viewed as a national resource. Pursuant to the adoption of the National Policy on Traditional Medicine, 2007, the Ministry of Health has established a Traditional Medicines Taskforce charged with promoting “safe and effective” traditional medicines nationwide, developing practitioner’s handbooks, and formalizing Traditional Practitioner’s Associations in the different provinces of PNG. The database provides the Taskforce with vetted information concerning particular medicinal plant uses. Guidelines regulating benefit sharing for intellectual property and accession of the database have been developed at UPNG, operating under the current UPNG benefit sharing model, which is generic and applicable to many areas of natural products research. It includes guidelines concerning intellectual property rights and benefit sharing, and has been approved by the government. These guidelines allowed us to access the database to identify commonly used medicinal plants in PNG, their therapeutic activities and preparation methods.

Our collaborative group had already reviewed the literature at UPNG to identify 116 plants used to treat fever and malaria, and another 88 reportedly used to treat cough and tuberculosis, both common co-morbidities with HIV. While many of these plants have also been identified as commonly used in the database (by ranking the most reported plant uses in the database), people are treated for a wide variety of other ailments with medicinal plants. Any of these preparations may (or may not) interfere with ART medicines. Because of this we have already prepared a general list of the most commonly used 100 plants recorded in the database as the list to be used to guide medicinal plant collection.

The relationship of Dr. Rai (head of the Traditional Medicines Taskforce) with provincial healer’s organizations is fortuitous because it links us to community groups with access to medicinal plants, and also provides a mechanism for dissemination of findings to those most involved in providing care in rural settings. Current Traditional Practitioner’s Associations have been established in 9 provinces to date: 1. Kainantu, Eastern Highlands (2005), 2. Oro (2006), 3. Milne Bay (2007), 4. Abau, Cloudy Bay (2008), 5. Morobe (2008), 6. Manus (2008), 7. Kiriwina, Trobriand Island (2008), 8. National Capital District (2009), 9. Autonomous Region of Bougainville (2010).

This NACS research project will be conducted by an already established collaboration embodied by the ICBG "Conservation and Sustainable Use of Biodiversity in Papua New Guinea". The work is supported by signed agreements between the institutions that embody the convention on biodiversity ideals and have detailed protections for intellectual property and benefit sharing protocols.

The majority of the work proposed in this application will be performed at the University of Papua New Guinea, N.C.D., PNG, and the University of Utah, Salt Lake City USA. Some plant collection will be performed by UPNG pharmacognosists and botanists at sites belonging to collaborating communities in various provinces. These sites will be selected from those communities that have ongoing relationships either with the Traditional Medicines Taskforce (headed by Dr. P. Rai, UPNG) or with the UPNG herbarium.

At the end of this work we will have produced hard data concerning the ability of the most commonly used medicinal plants in Papua New Guinea to inhibit or augment ART in HIV patients. This information will be the basis for drug interaction advisories/warnings made public through provincial healers associations and the formal healthcare providers in PNG. The immediate benefit to people living with HIV will be the avoidance of traditional medicinal preparations that antagonize ART. In addition, those plants with notable cytotoxicity in our *in vitro* screens will be flagged and information concerning this liability will be conveyed to those traditional healers who might use such plants.