Peruvian rainforest plants have anti-malarial activity

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An Atlas-award winning study reported in the *Journal of Ethnopharmacology* has found that traditional uses of medicinal plants in the Peruvian rainforest are, to a large extent, backed up by science. Samples taken from plants identified by people from the Iquitos-Nauta road communities and studied in the lab have been found to contain extracts that are harmful to protozoan parasites responsible for malaria and other infectious conditions common in the tropics.

These new findings pave the way for the identification of promising new compounds with potential for drug development, researchers say. Their work has been selected by an international scientific committee to receive this month's Atlas Award, selected from ten nominations that demonstrate the potential impact on people's lives around the world. The winning research is presented alongside interviews, expert opinions, multimedia and much more on the Atlas website.

"These people live at the edge of the city and forest so there are a lot of rural aspects to their lives," said Alexandre Maciuk of Université Paris-Saclay in France. "They interact a lot with the forest and this means that their knowledge of the forest resources is quite extensive, but being near the city, they also know quite a bit about modern medicine.

"They are not so far from the doctor, and know what malaria is; that it's a parasite. So they have this modern concept of medicine and they mix it with traditional knowledge," Dr. Maciuk added.

The research team, led in the field by Elsa Rengifo and Pedro Vásquez-Ocmín from Instituto de Investigationes de la Amazonia Peruana, surveyed 75 rural people from the province of Maynas, located in the region of Loreto, Peru, to learn which plants they traditionally used to treat malaria and 'uta' the name used for the condition called leishmaniasis. After making a list of plants named by at least five study participants, they verified and collected the plant species indicated. After carefully producing an extract from a small amount of the dried- and ground-up plants, researchers tested the ability of those extracts to harm protozoan parasites including:

- Plasmodium falciparum (which causes malaria);
- Leishmania donovani (which causes leishmaniasis); and
- Trypanosoma brucei gambiense (which causes African sleeping sickness).

From the initial list including dozens of plants, the researchers found ten with activity on P. falciparum, and 15 with activity on L. donovani. Extracts made from the leaves of a plant called Costus curvibracteatus and the bark of Grias neuberthii worked against all three parasitic species. The findings provide a list of candidates for further anti-protozoal research.

"The traditional use of plants and the methods used for treating these diseases is part of the richness of the mixed culture of rural mestizos," the researchers wrote. "These communities can easily share this knowledge, making it a resource that should be respected and preserved with the creation of indigenous pharmacopeias."

More information: Pedro Vásquez-Ocmín et al. Antiprotozoal activity of medicinal plants used by Iquitos-Nauta road communities in Loreto (Peru), *Journal of Ethnopharmacology* (2017). DOI: 10.1016/j.jep.2017.08.039

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