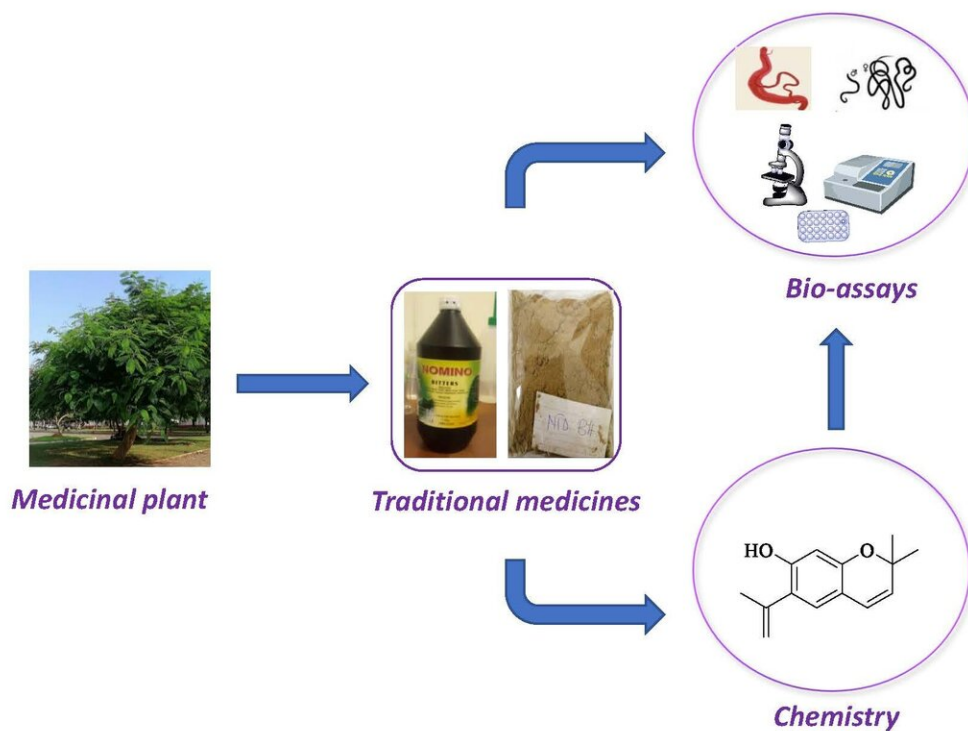


# Traditional Ghanaian medicines show promise against tropical diseases

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Chemical and Biological Investigation of Traditional medicines for Activity against NTDs. Photo of Schistosomiasis and Onchocerciasis sourced from Centers for Disease Control and Prevention DPDx - Laboratory Identification of Parasites of Public Health Concern under a CC-BY license (available at [https://www.cdc.gov/dpdx/schistosomiasis/images/7/S\\_mansoni\\_adult\\_Lammie1.jpg](https://www.cdc.gov/dpdx/schistosomiasis/images/7/S_mansoni_adult_Lammie1.jpg) and

[https://www.cdc.gov/dpdx/onchocerciasis/modules/O\\_volvulus\\_LifeCycle.gif](https://www.cdc.gov/dpdx/onchocerciasis/modules/O_volvulus_LifeCycle.gif)

Credit: Osei-Safo 2020 (CC-BY 2.0)

The discovery of new drugs is vital to achieving the eradication of neglected tropical diseases (NTDs) in Africa and around the world. Now, researchers reporting in *PLOS Neglected Tropical Diseases* have identified traditional Ghanaian medicines which work in the lab against schistosomiasis, onchocerciasis and lymphatic filariasis, three diseases endemic to Ghana.

The major intervention for NTDs in Ghana is currently mass drug administration of a few repeatedly recycled drugs, which can lead to reduced efficacy and the emergence of drug resistance. Chronic infections of schistosomiasis, onchocerciasis and [lymphatic filariasis](#) can be fatal. Schistosomiasis is caused by the blood flukes *Schistosoma haematobium* and *S. mansoni*. Onchocerciasis, or river blindness, is caused by the parasitic worm *Onchocerca volvulus*. Lymphatic filariasis, also called elephantiasis, is caused by the parasitic filarial worm *Wuchereria bancrofti*.

In the new work, Dorcas Osei-Safo of the University of Ghana, and colleagues obtained—from the Ghana Federation of Traditional Medicines Practitioners Association—15 [traditional medicines](#) used for treating NTDs in local communities. The medicines were available in aqueous herbal preparations or dried powdered herbs. In all cases, crude extracts were prepared from the herbs and screened in the laboratory for their ability to treat various NTDs.

Two extracts, NTD-B4-DCM and NTD-B7-DCM, displayed high activity against *S. mansoni* adult worms, decreasing the movement of the worms by 78.4% and 84.3% respectively. A different extract, NTD-

B2-DCM, was the most active against adult *Onchocera onchengi* [worms](#), killing 100% of males and more than 60% of females. Eight of 26 crude extracts tested, including NTD-B4-DCM and NTD-B2-DCM, also exhibited good activity against trypanosomes—parasites that cause other human diseases but weren't the original targets of the traditional medicines.

"By embracing indigenous knowledge systems which have evolved over centuries, we can potentially unlock a wealth of untapped research and shape it by conducting sound scientific investigations to produce safe, efficacious and good quality remedies," the researchers say.

**More information:** Twumasi EB, Akazue PI, Kyeremeh K, Gwira TM, Keiser J, Cho-Ngwa F, et al. (2020) Antischistosomal, antionchocercal and antitrypanosomal potentials of some Ghanaian traditional medicines and their constituents. *PLoS Negl Trop Dis* 14(12): e0008919. [DOI: 10.1371/journal.pntd.0008919](https://doi.org/10.1371/journal.pntd.0008919)

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