**Ethnopharmacology and antimalarial compounds from tropical plants**

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Malaria is caused by a protozoan parasite *Plasmodium* sp. and transmitted by *Anopheles* mosquitoes. The problem of parasite resistance towards common available medicines such as chloroquine, mefloquine, quinine, and more recently artemisinin and its derivatives, is a real threat in the control of the disease and in this context, the discovery of new treatment is urgently needed.

Despite some improvements in malaria control in the last years, this parasitic disease remains a major public health problem causing about 435 000 deaths from 219 million cases in 2017 worldwide, 93% of these death being located on the African continent, and mainly by children under the age of five[[1]](#footnote-1).

In this context, the laboratory of Pharmacognosy of Liège (Belgium) is involved in several collaborations with African Universities and Research Centers for the research and the analysis of plants and natural products that can be valorized for malaria treatment. One recent and important direction of research is the use of *Artemisia* sp. for the prevention and treatment of malaria. Projects concerning these plants will soon start in Cameroon and Rwanda. Another direction of research is the discovery of new antimalarial pure compounds that could be used as lead compounds to design new antimalarial drugs. Three projects of the laboratory will be shortly presented. The first one concerns a screening of endemic plants from Reunion island that lead to the discovery of a poupartone B, a compound presenting some toxicity concerns but whose toxicity could be decreased by recourse to vectorization. The second project started from a screening of Rwandan traditionally used plants and lead to the identification of the highly antiplasmodial compound ellagic acid and the development of semi-synthetic derivatives of this compound. The third project concerns bisindole alkaloids from *Strychnos* species. Some of these alkaloids presenting high *in vitro* and *in vivo* antiplasmodial activity could be considered as lead compounds. New metabolomics strategies are actually developed in order to identify minor bisindolic alkaloids with very high activities.

1. WHO, 2018, World Malaria Report. <https://www.who.int/news-room/fact-sheets/detail/malaria> , accessed 18 of September, 2019. [↑](#footnote-ref-1)