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Antiplasmodial activity and cytotoxicity of plants used in West African traditional medicine for the treatment of malaria

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Abstract

Eighteen plants originating from Ivory Coast were selected by ethnobotanical survey as plants commonly used by traditional healers for the treatment of malaria. Extracts of these plants were tested on two strains of *Plasmodium falciparum*: FcM29-Cameroon (chloroquine-resistant strain) and a Nigerian chloroquine-sensitive strain. The powdered plants were used to prepare three kinds of extracts: by decoction in water, in ethanol (95%) and in pentane. A radioactive micromethod allowed the evaluation of the antiplasmodial in vitro activity of the extracts on *P. falciparum*. Concentrations inhibiting 50% of the parasite growth (IC₅₀) ranged from 18 microg/ml to more than 500 microg/ml for aqueous and ethanol extracts and from 4.3 microg/ml to more than 500 microg/ml for pentane extracts. Cytotoxicity was estimated on A375 melanoma cells and a cytotoxicity/antiplasmodial index (CAR) was calculated for each extract, ranging from 1 to 10. The pentane extracts of *Cola caricaefolia* and *Uvaria afzelii*, which revealed the strongest antiplasmodial activity had CAR values of about 10.

Keywords:

Africa; Ivory Coast; Antiplasmodial; Cytotoxicity; Traditional medicine