Antitrypanosomal activity of some medicinal plants from Nigerian ethnomedicine

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Human African trypanosomiasis is a neglected tropical disease with complex clinical presentation, diagnosis, and difficult treatment. The available drugs for the treatment of trypanosomiasis are old, expensive, and less effective, associated with severe adverse reactions and face the problem of drug resistance. This situation underlines the urgent need for the development of new, effective, cheap, and safe drugs for the treatment of trypanosomiasis. The search for new antitrypanosomal agents in this study is based on ethnomedicine. In vitro antitrypanosomal activity of 36 plant extracts from 10 plant species from Nigerian ethnomedicine was evaluated against bloodstream forms of Trypanosoma brucei rhodesiense STIB 900. Cytotoxic activity was determined against mammalian L6 cells. Alamar blue assay was used to measure the endpoint of both antitrypanosomal and toxicity assays. The ethyl acetate extract of leaves of Ocimum gratissimum Linn. (Labiatae) showed the highest antitrypanosomal activity (IC(50) of 2.08 +/- 0.01 mug/ml) and a high selective index of 29. Furthermore, the hexane, ethyl acetate, or methanol extracts of Trema orientalis (L.) Blume (Ulmaceae), Pericopsis laxiflora (Benth. ex Baker) Meeuwen, Jatropha curcas Linn. (Euphorbiaceae), Terminalia catappa Linn. (Combretaceae), and Vitex doniana Sweet (Verbenaceae) displayed remarkable antitrypanosomal activity (IC(50) 2.1-17.2 mug/ml) with high selectivity indices (20-80) for trypanosomes. The antitrypanosomal activity of T. catappa and T. orientalis against T. brucei rhodesiense (STIB 900) is being reported for the first time in Nigerian ethnomedicine, and these plants could be a potential source of antitrypanosomal agents
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