

In-vivo* antiplasmodial and antipyretic activities of *Smilax krausiana

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Abstract

Antiplasmodial and antipyretic activities of whole plant extract and fractions of *Smilax krausiana* were evaluated to ascertain the folkloric claim of its antimalarial and antipyretic activities. The crude extract (24–72 mg/kg) and fractions (48 mg/kg) of *Smilax krausiana* were investigated for antiplasmodial activity against chloroquine-sensitive *Plasmodium berghei* infections in mice and for antipyretic activity against dinitrophenol and yeast-induced pyrexia. The antiplasmodial activity during early and established infections as well as prophylactic were investigated. Artesunate (5 mg/kg) and pyrimethamine (1.2 mg/kg) were used as positive controls. Thin films made from tail blood of each mouse were used to assess the level of parasitaemia of the mice. Antipyretic activity of the crude extract was also evaluated against dinitrophenol and yeast-induced pyrexia. The extract and its fractions dose-dependently reduced parasitaemia induced by chloroquine-sensitive *Plasmodium berghei* infection in prophylactic, suppressive and curative models in mice. These reductions were statistically significant ($p < 0.001$). They also improved the mean survival time (MST) from 10 to 21 days relative to control ($p < 0.01$ – 0.001). The activities of extract/fractions were comparable to that of the standard drugs used (artesunate and pyrimethamine). On pyrexia induced by dinitrophenol and yeast, the extract exerted considerable inhibitions especially in yeast-induced pyrexia. These inhibitions in yeast-induced pyrexia were statistically significant ($p < 0.05$ – 0.001) and in a dose-dependent fashion. The antiplasmodial and antipyretic effects may in part be mediated through the chemical constituents of the plant.

Keywords: *Smilax krausiana*, antiplasmodial, antipyretic, *Plasmodium berghei*

Introduction

Smilax krausiana (Smilacaceae) is a tropical weed that is distributed from West Africa to South Africa especially in the rain forest zone. It is an evergreen shrub or semi-shrub with climbing branches and stapler tendrils (Inyang, 2000; Inyang 2003). The leaf is widely used in East Africa for the treatment of infertility especially in human and veterinary medicine, while the Ibibios of Niger Delta of Nigeria use the leaf in the treatment of inflammatory diseases