Innovations in Pharmaceuticals and Pharmacotherapy

www.innpharmacotherapy.com

eISSN: 2321–323X
pISSN: 2395-0781

Research article

Evaluation of antimalarial effect of methanol root extract of *Costus Lucanusianus* in the treatment of malaria-infested albino mice

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Abstract

This study is one of its kinds because there is little or no published work on the plant in question. **Aim**: This study was conducted to evaluate the antimalarial activity of methanol root extract of *Costus lucanusianus* on chloroquine-sensitive *Plasmodium berghei berghei* infection in mice. **Method**: The plant extract was screened for blood schizontocidal activity against chloroquine-sensitive *Plasmodium berghei* infection in the mice. The schizontocidal activity was monitored at stages of early and established infection. The methanol extract of the roots at 100, 200 and 300 mg kg^{-1} body weight/day dose levels were used to treat the test groups immediately after infection for the suppressive test and 72 hours post infection for the curative test while a standard antimalarial drug, Chloroquine, at a dose of 5 mg kg^{-1} body weight was administered as the reference drug. The control group was left untreated. The levels of parasitemia in the different groups were monitored throughout the period of study. **Result**: The methanol extract at 100, 200 and 300 mg kg^{-1} body weight/day suppressed parasitemia by 112/µl, 128/µl, 192/µl after treating for four days in the suppressive test as against 144/µl for the standard drug with significance of $p<0.0001$, while the level of parasitemia was reduced by 528/µl, 320/µl and 240/µl, respectively after treating for three days in the curative test as against 160±/µl for the standard drug. **Conclusion**: These results show that the methanol root extract of *Costus lucanusianus* has suppressive and also potent curative effect against *P. berghei* in infected mice. Thus it may therefore offer the potential for a safe, effective and affordable antimalarial drug. It therefore justifies its use by those in rural areas to treat malaria.The mechanism behind the antiplasmodial activity displayed by *C. lucanusianus* is yet to be demonstrated. However, some plants have been shown to elicit antiplasmodial effects either by inducing an elevation of erythrocyte oxidation or by inhibiting the synthesis of proteins.

Keywords: *Costus lucanusianus*, schizontocidal activity, parasitemia, suppressive activity, *Plasmodium berghei*, Chloroquine.

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