Article

Median Lethal Dose, Antimalarial Activity, Phytochemical Screening and Radical Scavenging of Methanolic Languas galanga Rhizome Extract

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Abstract: The methanolic extract of Languas galanga rhizomes was investigated for antimalarial activity against Plasmodium berghei (NK65) infections in mice. The median lethal dose was determined to ascertain the safety of the extract in ICR mice of both sexes. The antimalarial activities during early and established infections, as well as the prophylactic activity were evaluated. Phytochemical screening and radical scavenging activity of the extract were also investigated to elucidate the possible mechanism of the antimalarial properties. The acute oral toxicity (LD$_{50}$) of Languas galanga extract in mice was established to be 4,998 mg/kg. The extract of Languas galanga rhizomes demonstrated significant antiplasmodial activity in all the three models of the antimalarial evaluations. Phytochemical screening revealed the presence of some vital antiplasmodial constituents such as terpenoids and flavonoids. The extract also exhibited a moderate capacity to scavenge the free radicals. The rhizome extract of Languas galanga thus possesses antimalarial activity, which explains the rational usage of this plant in traditional Malaysian medicine.

Keywords: Languas galanga; methanolic extract; antimalarial activity