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**Antimalarial activity of crude extracts and solvent fractions of Vernonia amygdalina (Asteraceae) against Plasmodium berghei in mice model**Temesgen Bihonegn<sup>1</sup>, Mirutse Giday<sup>2</sup>, Getnet Yimer<sup>2</sup>, Abebe Animut<sup>2</sup> and Mekonnen Sisay<sup>3</sup><sup>1</sup>Wollo University, Ethiopia<sup>2</sup>Addis Ababa University, Ethiopia<sup>3</sup>Haramaya University, Ethiopia

**Background & Objective:** Malaria is one of the leading causes of morbidity and mortality in Ethiopia. Problem associated with control of malaria is mainly related to development of resistance to first line treatments. Different medicinal plants have been used in different parts of the globe to manage Malaria. In Ethiopia, Vernonia amygdalina is reported to be traditionally used for the treatment of Malaria. However, no scientific investigations have been carried out yet on the plant to substantiate the claim. Thus, this study was undertaken to evaluate *in vivo* antimalarial activity of crude extracts and solvent fractions of the leaves of Vernonia amygdalina.

**Method:** A four-day *in vivo* test was conducted on mice infected with Plasmodium berghei to find out suppressive effect of hydro-alcoholic and aqueous crude extracts and chloroform; butanol and aqueous fractions from hydro-alcoholic extract of the leaves of Vernonia amygdalina.

**Result:** Acute oral toxicity test showed that all solvent fractions of the leaves of Vernonia amygdalina revealed no mortality and signs of toxicities up to 2000 mg/kg. The present study indicated that the percentage suppression of hydro-alcoholic extract was 32.47%, 35.4% and 37.67% at 200, 400 and 600 mg/kg, respectively and the percentage suppression of aqueous extract was 21.22%, 22.20% and 24.52% at 200, 400 and 600 mg/kg, respectively. All doses of crude extracts of Vernonia amygdalina prolonged survival time and prevented weight loss and packed cell volume reduction of infected mice in a dose dependent manner. Except for aqueous fraction, all doses of chloroform and butanol fractions suppressed parasitemia load significantly ( $p < 0.05$ ). Both chloroform and butanol fractions were capable of significantly ( $p < 0.05$ ) increasing survival time of infected mice at all doses compared to negative control. All tested doses of chloroform and butanol fractions exhibited statistically significant reduction in rectal temperature of infected mice ( $p < 0.05$ ) in a dose-dependent manner. All doses of chloroform, butanol and aqueous fractions significantly prevented weight loss of infected mice ( $p < 0.05$ ). All doses of the two extracts significantly ( $p < 0.05$ ) caused less reduction in rectal temperature of Plasmodium berghei infected mice as compared to the negative control. All doses of chloroform and butanol fractions significantly ( $p < 0.05$ ) caused less decline in temperature of infected mice as compared to the negative control.

**Conclusion:** The results of the present study indicated that crude extracts and solvent fractions of the leaf of Vernonia amygdalina demonstrated antimalarial activity. This corroborated its use in ethnomedicine in Ethiopia in the treatment of malaria. More studies are needed to be carried out to isolate and characterize active anti-plasmodial constituents in the extracts and solvent fractions of this plant.

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