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The Effect of Simplex Nanoparticles of *Vernonia amygdalina* Del. on Lipid Profile in Hyperlipidemic Rats

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Abstract: Hyperlipidemia is one of the major risk factor for *Cardiovascular Diseases* (CVD). *Vernonia amygdalina* of the family Asteraceae contains flavonoid, saponin and tannin has been being used for the treatment of hyperlipidemia thereby reducing the risk of cardiovascular disease. Treatment of hyperlipidemia is time consuming and costly. Treatment using natural product has been used widely and believed to be effective with less side effect compared to modern medication. Application of nanotechnology in medicine increases steadily but none has been reported for *Vernonia amygdalina* simplex. The purpose of this study was to evaluate the effect of simplex nanoparticles of *Vernonia amygdalina* on lipid profile in hyperlipidemic rats. Nanoparticles of *Vernonia amygdalina* simplex was prepared by milling method then the characteristics of simplex nanoparticles was analyzed by using SEM (*Scanning Electron Microscope*) and PSA (*Particle Size Analyzer*). The lipid profile was determined by enzymatic colorimetric method. Data was analyzed by *Anova* with *Post Hoc Tukey*. SEM and PSA analyses showed that the morphology of nanoparticle of *Vernonia amygdalina* simplex is spherical shaped with particle size 600-700 nm. The results showed that simplex nanoparticles of *Vernonia amygdalina* with the doses of 100 mg/kg bw, 150 mg/kg bw and 200 mg/kg bw decrease total cholesterol, triglyceride, LDL-C and increase HDL-C level significantly with negative control ($p < 0.05$).
Key words: Nanoparticles of *Vernonia amygdalina,* lipid profile.

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