

**Phytochemical screening, in vitro and in vivo antioxidant activities of Aqueous extract of *Anacardium occidentale* Linn. and its effects on Endogenous Antioxidant Enzymes in Hypercholesterolemic induced rabbits.**

ABSTRACT

Oxidative stress has been shown to play important role in the development of various diseases. In this study, researchers investigated the existence of phytochemical constituents of *Anacardium occidentale* Linn. (AO) leaf and evaluate its in vitro and in vivo antioxidant activities in aqueous extract form. Phytochemical screening of AO was performed according to the standard method while in vitro antioxidant activities were performed via DDPH free radical scavenging and Ferric reducing antioxidant power assay. In vivo antioxidant activities were evaluated in hypercholesterolemic induced adult male New Zealand white rabbits. Phenolic, flavonoids, steroids and triterpenes were found in the leaf of AO. The freeze dried aqueous extract showed no significant different compared to BHT in in vitro antioxidant analysis when assessed using the FRAP assay. Supplementation of aqueous extract of AO (100, 200 mg/kg/day) to the hypercholesterolemic induced rabbits caused a significant decreased ( $p < 0.05$ ) of malondialdehyde and significant increased ( $p < 0.05$ ) of superoxide dismutase and catalase levels at the end of the study period compared to the groups received high cholesterol diet alone. Aqueous extract of AO possess the ability to act as an antioxidant in vitro and in vivo and also was able to increase the level of superoxide dismutase and catalase in experimental hypercholesterolemia. The presence of flavonoids in the extract could be attributed to the antioxidative effect of the plant.

**Keyword:** *Anacardium occidentale*; Antioxidant enzymes; Flavonoid.