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Evaluation of *In vitro* Anti-inflammatory Activity of Ethanol and Aqueous Extracts of the Whole Plant of *Cardiospermum Halicacabum*

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Presently, synthetic steroidal and non-steroidal anti-inflammatory drugs (NSAIDs) are used to treat symptoms associated with inflammatory diseases, which can cause severe side effects when used for long-term. Therefore, there is a high demand for novel, potent anti-inflammatory agents with fewer side effects, preferably from plant sources. *Cardiospermum halicacabum* (Walpenala) has been used to treat inflammatory diseases since ancient times in Ayurvedic medicine. This study was aimed to evaluate *in vitro* anti-inflammatory activity of extracts of the whole plant of *C. halicacabum*. The ethanol and aqueous extracts were prepared by the cold maceration method. Both extracts were assessed for their anti-inflammatory activity *in vitro* by the heat-induced ovalbumin denaturation method using diclofenac sodium as the reference drug. The percentage yield of ethanol and aqueous extracts were 15.7% and 10.4% w/w respectively. The results showed that ethanol and aqueous extract at a concentration range of 0.5 – 16 mg/ml and the reference drug diclofenac sodium at a concentration range of 0.05 – 1.6 mg/ml. The ethanol extract showed a moderate anti-inflammatory activity (IC50 at 5157 µg/mL) and the aqueous extract showed a mild anti-inflammatory activity (IC50 at 8121 µg/mL) with reference to standard diclofenac sodium (IC50 at 1922 µg/mL). Ethanol and aqueous extracts showed a statistically significant ($p<0.05$) positive correlation between concentration and percentage inhibition of protein denaturation. The present study justifies the possibility of application of *C. halicacabum* as an anti-inflammatory agent, though further studies are recommended to be continued to confirm the results and isolate the lead chemical constituents.

Keywords: *anti-inflammatory, Cardiospermum halicacabum, ovalbumin denaturation*