Anti-inflammatory effects of Hibiscus rosa-sinensis L. and Hibiscus rosa-sinensis var. alba ethanol extracts

ABSTRACT

Objective: The study was carried out to determine and compare the anti-inflammatory activities of ethanol extract of flower and leaf of Hibiscus rosa-sinensis var alba(white Hibiscus) and Hibiscus rosa-sinensis L. (red Hibiscus). Methods: In the anti-inflammatory test, 0.1ml of carrageenan was injected sub plantarly 30 min before administration of each extracts (5, 50 or 100mg/kg). The animals were killed 6 hrs after carrageenan injection and polymorphonuclear infiltration (PNL) in paw tissues were counted. Phytochemical screening was also performed. Acute dose response was determined using Fixed Dose Procedure with fixed level of doses. Results: The results revealed flavanoids, saponins and steroids presence in all extracts. Dosing of animals up to 500 mg/kg of all extracts caused no toxicity. No significant changes ($p>0.05$) in liver enzyme levels and histologically no lesions in the organs. Dosing of 50 and 100 mg/kg of flower and leaf estracts of Hibiscus rosa sinensis L. caused significant inhibition ($p<0.05$) of edema. Flower and leaf of Hibiscus rosa-sinensis var alba significantly inhibited ($p<0.05$) edema in all range of testing dose. The white hibiscus revealed a more potent anti -inflammation. All extracts at various concentration cause d significant reducti on ($p<0.05$) on PNL infiltration with white Hibiscus also more potent than red hibiscus. All extracts M showed significant reduction ($p<0.05$) on the duration of licking response. Same pattern was also observed as white Hibiscus was more potent inhibitor. Conclusion: This study showed flower and leaf of Hibiscus rosa-sinensis var alba and Hibiscus rosa sinensis L. produced anti-acute inflammatory activity. It may involve the inhibition of cyclooxygenase and reduce PNL and the white Hibiscus variety was more potent than the red variety.

Keyword: Hibiscus rosa-sinensis var alba; Hibiscus rosa-sinensis L.; Anti-accute inflammatory; Cyclooxygenase; PNL