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Anti-inflammatory Activity of Ixora coccinea Methanolic Leaf Extract

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ABSTRACT

The anti-inflammatory activity of methanolic leaf extract (MLE) of Ixora coccinea Linn. (Rubiaceae) was investigated in this study. MLE showed dose-dependent anti-inflammatory activity in carrageenan-induced rat paw edema model (r = 0.7; P<0.01). MLE at a dose of 500, 1000, and 1500 mg/kg showed maximum inhibition of edema 36.7, 46.5, and 64.5% respectively (P<0.01). Oral administration of MLE of rats at a dose of 1500 mg/kg significantly inhibited peritoneal phagocytic cell infiltration (45.9%; P<0.05), impaired nitric oxide (NO) production in peritoneal cells (40.8%; P<0.01) and showed anti- histamine activity (54.9%; P<0.01). In vitro treatment of rat peritoneal cells with MLE inhibited NO production dose- dependently (82.2% at 400 dg/ml, r = 0.99; P<0.05). MLE also possessed significant, dose-dependent in vitro anti-oxidant activity (r = 0.88; P<0.01; IC50 value = 8.0 g/ml), membrane stabilizing activity (r = 0.81; P<0.01; IC50 value = 6.4 ng/ml) and lipid peroxidation activity (36.7% at 250 lg/ml; P<0.01). Thirty-day oral treatment of rats with 1500 mg/kg did not show any adverse signs of toxicity or behavioral changes. These results suggest that anti-inflammatory activity of I. coccinea is mediated via inhibition NO production, phagocytic cell infiltration, anti-histamine effect, scavenging of free radicals, membrane stabilizing activity and lipid peroxidation.

KEYWORDS

anti-inflammatory activity . anti-oxidant . cell infiltration . Ixora coccinea . membrane stabilization . nitric oxide

REFERENCES