

Antinociceptive, anti-inflammatory, antimicrobial and central nervous system depressant activities of ethanolic extract of leaves and roots of *Gomphostemma parviflorum* var. *parviflorum* wall

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ABSTRACT

Background *Gomphostemma parviflorum* (Lamiaceae) is a medicinal plant of Bangladesh which has been used traditionally in the treatment of painful and inflammatory conditions such as asthma, headache, fever, etc. **Objective** To investigate the antinociceptive, anti-inflammatory, central nervous system (CNS) depressant and antimicrobial activities of ethanolic extracts of leaves (GPLE) and roots (GPRE) of the plant. **Materials and Methods** The antinociceptive potentials of the extracts were studied using acetic acid-induced writhing test in mice, anti-inflammatory activity was investigated using carrageenan-induced paw edema in rats, CNS depressant activities were evaluated using pentobarbitone-induced sleeping time, Hole cross and Open field tests in mice while the anti-microbial activity was studied by in vitro disc diffusion method. **Results** The extracts GPLE and GPRE significantly ($P < 0.001$) and dose dependently inhibited the acetic acid-induced writhing in mice with 73.15% and 53.69% inhibition, respectively at the dose of 200 mg/kg. At the same dose GPLE and GPRE significantly inhibited carrageenan-induced rats paw edema at the end of 4 hour with 35.54% and 28.17% inhibition, respectively. The extracts significantly prolonged the pentobarbitone-induced sleeping time and decreased the locomotory activities in open field and Hole cross tests in mice. The GPLE showed strong antimicrobial activity against Gram-positive and Gram-negative bacteria with zones of inhibition ranging from 8 to 20 mm at a concentration of 400 mug/disc. **Conclusion** The findings of the study indicate that the leaves and roots of *G. parviflorum* possess antinociceptive, anti-inflammatory and CNS depressant activity and revealed the antimicrobial activities of leaves extract of the plant. The results justify the traditional use of the plant in the treatment of painful and inflammatory disorders.

KEYWORDS

Anti-inflammatory . antimicrobial activities . antinociceptive . central nervous system depressant . *Gomphostemma parviflorum* . writhing

REFERENCES