

Antinociceptive, anti-inflammatory and antipyretic effects of solanum nigrum aqueous extract in animal models

Abstract

The present study was carried out to evaluate the antinociceptive, anti-inflammatory and antipyretic effects of the aqueous extract of *Solanum nigrum* leaves using various animal models. The extract, at concentrations of 10, 50 and 100%, was prepared by soaking (1:20; w/v) air-dried powdered leaves (20 g) in distilled water (dH₂O) for 72 h. The extract solutions were administered subcutaneously in mice/rats 30 min prior to the tests. The extract exhibited significant ($P < 0.05$) antinociceptive activity when assessed using the abdominal constriction, hot plate and formalin tests. The extract also produced significant ($P < 0.05$) anti-inflammatory and antipyretic activities when assessed using the carrageenan-induced paw edema and brewer's yeast-induced pyrexia tests, respectively. Overall, these activities occurred in a concentration-dependent manner, except for the 50% concentration of the extract, which was not effective in the abdominal constriction test. In conclusion, the present study demonstrated that *S. nigrum* leaves possessed antinociceptive, anti-inflammatory and antipyretic effects and thus supported traditional claims of its medicinal uses.

Keyword: Anti-inflammatory; Antinociceptive; Antipyretic; Aqueous extract; *Solanum nigrum*