

The evaluation of antinociceptive activity of alkaloid, methanolic, and aqueous extracts of Malaysian *Mitragyna speciosa* Korth leaves in rats

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ABSTRACT

Mitragyna speciosa Korth is a medicinal plant indigenous to Thailand and Malaysia and has been known for its narcotic and coca-like effects. Many studies have been performed on the antinociceptive effect of the plant extracts of Thai origin; however, limited studies have been reported till date on *M. speciosa* extracts of Malaysian origin. Various concentrations of alkaloid (5-20 mg/kg), methanolic (50-200 mg/kg), and aqueous (100-400 mg/kg) extracts of Malaysian *M. speciosa* leaves were prepared and orally administered to nine groups of rats. Morphine (5 mg/kg, s.c.) and aspirin (300 mg/kg, p.o.) were used as control. Antagonism of the antinociceptive activity was evaluated by pretreatment with naloxone at a dose of 2 mg/kg (i.p.). Results showed that oral administration of the alkaloid (20 mg/kg), methanolic (200 mg/kg), and aqueous (400 mg/kg) extracts significantly prolonged the latency of nociceptive response compared with control groups in both hot plate and tail flick tests ($P < 0.05$). Antinociceptive action of the alkaloid (20 mg/kg), methanolic (200 mg/kg), and aqueous (400 mg/kg) extracts was significantly blocked by naloxone. In conclusion, these results suggest the presence of antinociceptive effect in various extracts of Malaysian *M. speciosa* leaves. In addition, the antinociceptive effective doses vary depending on the type of solvents used for extraction.

KEYWORDS

Alkaloid . antinociceptive . aqueous . extract . methanol . *Mitragyna speciosa*

REFERENCES