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Effect of Zhumeria majdae Rech. f. & Wendelbo aerial parts extracts and fractions on morphine withdrawal syndrome in mice

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Abstract

Background: Zhumeria_majdae showed antinociceptive and anti-inflammatory activity. The antinociceptive effect was inhibited by naloxone in hot-plate test. Objective: As Z. majdae antinociceptive activity was inhibited by an opioid antagonist, we decided to evaluate the effects of this plant on withdrawal syndrome. Methods: Dependence was induced using subcutaneous injections of morphine daily for three days (50, 50 and 75 mg/kg). On the fourth day, morphine was injected two hours prior to the intraperitoneal injection of naloxone. The number of jumps during the 30 minutes period after naloxone injection was considered as measure of withdrawal syndrome. The extracts and fractions were injected 30 min prior to morphine injection. The results indicated that methanolic extracts (0.28, 1.12 and 1.96 mg/kg) reduced the number of jumps (compared to control) up to %64, %85 and % 99.3, respectively. The methanolic-aqueous (3:2) extracted with chlorphorm also reduced withdrawal syndrome. Three MPLC fractions, 0.28 mg/kg, (A, B and C, similar R_f in each group) also reduced the number of jumping up to %97, %92 and % 55, respectively in mice. In the open field test, on the contrary of MPLC fractions, the methanolic extract reduced locomotor activity. Conclusion: It is concluded that Z. majdae aerial parts methanolic extract and MPLC fractions reduced withdrawal syndrome via differents mechanism of actions.

Author keywords

Fraction; Morphine; Opioid system; Withdrawal syndrome; Zhumeria majdae

Indexed Keywords

EMTREE drug terms: chloroform; methanol; morphine; naloxone; opiate receptor; plant extract; unclassified drug; Zhumeria majdae extract

EMTREE medical terms: animal experiment; animal model; antinociception; article; controlled study; drug dependence; drug effect; drug inhibition; locomotion; medicinal plant; mouse; nonhuman; withdrawal syndrome; Zhumeria majdae

Species Index: Mus; Zhumeria majdae

Chemicals and CAS Registry Numbers: chloroform, 67-66-3; methanol, 67-56-1; morphine, 52-26-6, 57-27-2; naloxone, 357-08-4, 465-65-6

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