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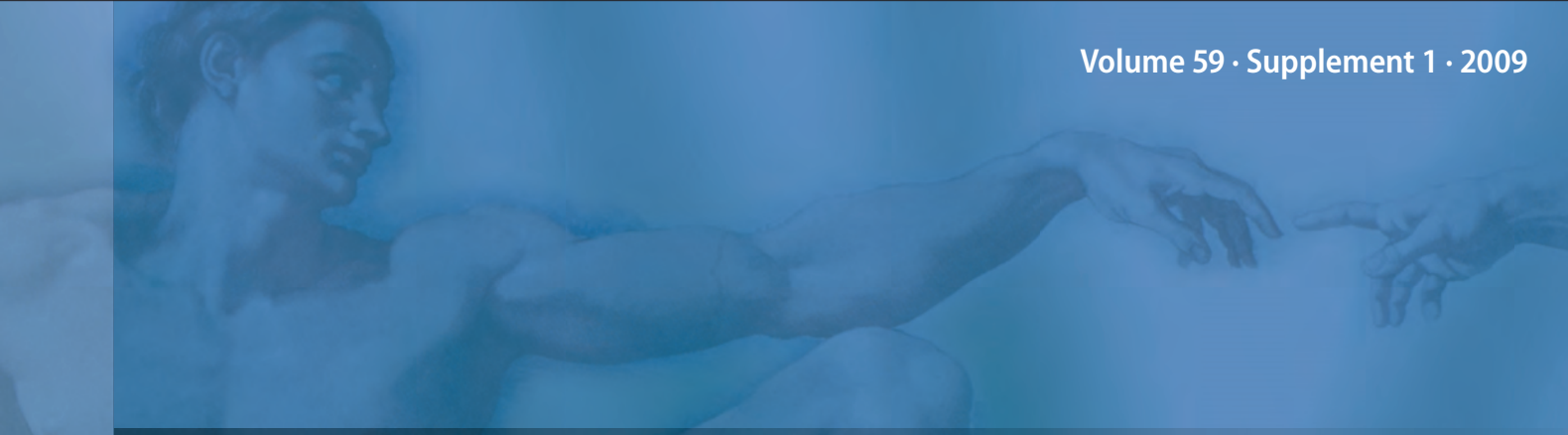

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ANALGESIC, ANTI-INFLAMMATORY AND ANTIPYRETIC ACTIVITIES FROM FLAVONOID FRACTIONS OF CHROMOLAENA ODORATA

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The ethanolic extract of Chromolaena odorata was fractionated with solvent-solvent extraction technique using the following solvents successively, n-hexane, dichloromethane, ethyl acetate, n-butanol and water. The fractions were evaluated for analgesic, anti-inflammatory and antipyretic activities using standard experimental models which includes; hot plate and formalin paw licking tests for analgesic activities, carrageenan paw oedema and cotton pellet granuloma for anti-inflammatory activities and Brewer's yeast induced pyrexia for antipyretic tests. The dichloromethane (DCF), n-butanol (nBF) and ethyl acetate (EAF) fractions were analyzed using analytical thin-layer chromatography (TLC), and preparative thin-layer chromatography (PTLC). Spectral studies were carried out using ultra-violet (UV) and infra-red (IR) spectroscopy. Phytochemical screening was carried out on the isolated compounds and the Rf values were determined. The result shows that the DCF produced consistent analgesic, anti-inflammatory and antipyretic activities followed by the nBF and EAF. Spectroscopic and phytochemical analyses revealed the presence of flavonoid in DCF. The biological activities of the extract can therefore be attributed to the presence of flavonoids in the fractions.

P3PM-12-12

ANALGESIC EFFECTS OF SPARTIUM JUNCEUM L. FLOWER EXTRACT IN RAT FORMALIN TEST

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Our objective was to study the analgesic activity of Spartium junceum L.flowers (Fabaceae) aqueous extract. The analgesic and anti-inflammatory effects of alcoholic and hexane extract of its flower have been investigated by rat tail flick and mechanical pain models. Because of high toxicity of its alcoholic extracts, its medicinal application was restricted. The aqueous extract of S. jancinum has been used as herbal drug named Zahraa in Syria. Samples of flower was collected from wild plants, dried, powered and extracted with water. The extracts were evaporated to dryness and then suspended in normal saline. They were tested for analgesic activity in the rat (Sprague Dawley, 150-200g) formalin test. Intrapreritoneal ingections of different doses of extracts (0.01, 0.1 mg/kg, i.p.) to rat were shown to reduce the pain in both phases of formalin test in comparison with control. The preliminary phytochemical studied showed that the extract contains flavonoids & saponin. The data from this preliminary study reveal interesting pharmacological properties of Spartium junceum L.flower aqueous extract related to the marked analgesic activity.

P3PM-12-13

OPIOID RECEPTORS LOCATED IN THE RAT NUCLEUS CUNEIFORMIS INDIRECTLY IMPRESS THE MORPHINE-INDUCED ANTINOCICEPTION IN FORMALIN TEST

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Previous studies have been shown the role of nucleus cuneiformis (CnF) in acute pain but not in chronic pain model; as a result the present study tries to determine the possible effects of opioid receptors located in the CnF on both early and late phases of formalin test following Intra-CnF and systemic morphine administration. In order to calculate the 50% effective dose (ED50%) of morphine, ninety five Wistar rats were bilaterally received morphine (1, 2, 4 and 8 μg/0.3 μl saline per side) into the CnF. Naloxone (1 μg/0.3 μl saline per side) was microinjected 2 min before local or 28 min after intraperitoneal (i.p.) administration of morphine. Each rat was given a subcutaneous 50-μl injection of formalin (2.5%) into plantar surface of hind paw. The results showed that bilateral intra-CnF administration of morphine dose-dependently produced analgesia in formalin test. Naloxone administration into the CnF antagonized the analgesic response induced by morphine (ED50%; 4 μg/0.3 μl saline) microinjection. The results also showed that analgesic effect of systemic morphine (6 mg/kg; i.p.) was not significantly decreased by naloxone microinjection. We suggest that the opioid receptors located in the CnF act, in part, in morphine-induced analgesia indirectly.

P3PM-12-14

ANTINOCICEPTIVE ACTIVITY OF NAJANALGESIN IN EXPERIMENTAL NEUROPATHIC PAIN IN RATS

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The objectives of this study extended to determine whether najanalgesin isolated from naja naja atra could attenuate neuropathic pain through peripheral as well as spinal mechanisms, < whether the antihyperalgesia was receptors mediated. By using L5 spinal nerve ligation < transection, in a rat model of neuropathic pain, we observed that intraperitoneal administration of najanalgesin in neuropathic pain model, produced significant increase in hind paw withdrawal latency (HWLs) to both noxious mechanical < thermal stimulation. Moreover, a single dose of najanalgesin induced antinociceptive activity lasting for at least 1 week. Intrathecal injection of najanalgesin increased the HWLs to mechanical stimuli. < the antinociceptive effect of najanalgesin was partly inhibited by intrathecal injection of naloxone or atropin. We observed that najanalgesin elicited pronounced antinociceptive activity in neuropathic pain model in the central < peripheral nervous systems. The opioid receptor < muscatinic acetylcholine receptor were involved in the antinociception induced by najanalgesin in the spinal cord. This research gives new insights to the feasibility that najanalgesin may have potential as a novel pharmacotherapeutic agent for anti-neuropathic pain.

P3PM-12-15

INVOLVEMENT OF OPIOIDERGIC AND SEROTONINERGIC SYSTEMS IN THE ANTI-NOCICEPTIVE EFFECT OF *TANACETUM PARTHENIUM*

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Tanacetum parthenium (T.p.) is used in folk medicine as a treatment wiedly. We reported the analgesic effect of T.p. flowers and leaves previously. This study was designed to find how this mechanism is occurred by T.p. flower extract.

Based on our previous study, the dose of 50 mg/kg i.p. of the aqueous extract has analgesic effect on mice (NMRI) (20 ± 2 g) that was used for study. We studied involvement of the opioidergic, serotoninergic,α-adrenergic systems separatly in anti-nociceptive effect. 15 min before the administration of the extract, animals were pretreated with drugs, including naloxane (5mg/kg, i.p.), serotoninergic antagonist cyproheptadine (4 mg/kg, i.p.) and α-adrenergic antagonist phentolamine (20mg/kg, i.p.)(n > 6 in each group).

Pretreatment with naloxane increased pain percepation in the neurogenic phase of formalin test compared to the control ($p<0.001$). Moreover cyproheptadine increased the sensation of pain in both phases ($p<0.05$). Inhibition of α -adrenergic system was not be able to attenuate the anti-nociceptive effect of the extract.

These results propose the involvement of sertoninergic and opioidergic systems in the anti-nociceptive effect of the T.p. extract.

Keywords: *Tanacetum parthenium*, opioidergic system, sertoninergic system, formalin test.

P3PM-12-16

INHIBITION OF SOMATOSENSORY EVOKED POTENTIAL BY EPIDURAL MOTOR CORTEX STIMULATION IN RATS

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Recently, the studies in animal models showed that MCS elicited antinociceptive effect in behavior test. However, mechanisms of MCS-induced pain relief were still unclear. The present study examined the effect of MCS on the response of primary somatosensory cortex (SI). The electrical stimulations were applied on the contralateral forepaws of both sides. The somatosensory evoked potentials (SEP) of both hemispheres could be recorded in SI to monitor the change of cortical activity. After the stable baseline cortical activities were obtained, the motor cortex stimulation was applied on the motor cortex of forepaw area. The different parameters of MCS in intensity, frequency and duration of MCS were tested. After cession of MCS, the SEP were recorded every 30 minutes and compared to baseline. The SEPs of SI ipsilateral to MCS were decreased after stimulations with higher intensity, frequency or longer duration applied on the motor cortex. The inhibition in these experiments with different parameters was dose-dependent. However, the SEPs of SI contralateral to MCS were not changed obviously. These results suggest that the function of SI was reduced by MCS and provide an electrophysiological evidence for the effect of motor cortex stimulation in the animal model of pain control.