

The anti-inflammatory effect of hydroalcoholic extract aerial parts of *Ferula szowitziana* on male rat

Subject: Other related topics- **Inflammation**

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Background and Aim: Inflammation is a tissue response to an injury, often injury caused by invading pathogens. It is characterized by increased blood flow to the tissue that increased temperature, redness, swelling and pain. Inflammatory abnormalities are a large group of disorders that underlie a vast variety of human diseases and the available Non-steroidal anti-inflammatory drugs (NSAIDs) has many side effects. Therefore it seems to be necessary to find medicines with least side effect.

Methods: Hydroalcoholic extract from stem and leaves of *Ferula szowitziana* was prepared. Tween 80, ethanol and saline was used as solvent. All the treatments performed intraperitoneally (i.p.). Animals were arranged in five groups (n=7) of male Wistar rats (weighing 200-250 g), consist of control, sham (solvent) and three groups of plant extract (50-100-200 mg/kg, i.p.). Inflammation were tested by formalin induced paw edema and measured by plethysmometer method.

Results: Data showed a significant reduction in the volume of paw edema and inflammation specially at the dose of 200 mg/kg i.p. ($p<0.01$).

Conclusion: This anti-inflammatory effect arised from the results, can possibly be due to the plants monoterpenes such as α pinene, β pinene, caryophyllene which they showed anti-inflammatory effect in the other plants species.

Keywords: Paw edema, *Ferula szowitziana*, Monoterpens, Rat

Hydroalcoholic extract of stem and leaves of *Ferula szowitziana* affects chemical pain sensation in the rat

Subject: Pain

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Background and Aim: Pain is a frequent unpleasant sense in the life. Because of pain remedies side effects, more research for pain killers is required. *Ferula szowitziana* in traditional medicine mentioned as analgesic. Due to its monoterpenes its antinociceptive effect is expected also. In this study, its effect on chemical pain sensation was investigated.

Methods: Hydroalcoholic extract of areal part of *Ferula szowitziana* was acquired. The extract solved in saline, ethanol and tween 80 (8:1:1). Male Wistar rats (200-250g) were used in five groups including control, sham (intraperitoneally or i.p. injection of solvent) and extract in three dose groups (50-100-200 mg/kg, i.p.). Formalin test is used for chemical pain assessment.

Results: Extract caused antinociceptive effect both in the first and second phases of formalin test (one way ANOVA, n=7, p<0.01, p<0.05 respectively) in a dose dependence manner, especially in the first phase.

Conclusion: It seems that the analgesic effect of *Ferula* is due to its monoterpenes such as α pinene, β pinene, limonene, caryophyllene and their various influences on peripheral and central nervous system which needs more investigation.

Keywords: Analgesia, *Ferula szowitziana*, Monoterpenes, Extract

Micro RNAs in Glioblastoma Multiforme and apoptotic pathways

Subject: Neurogenetics

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Background and Aim: Brain tumor is an abnormal Growth tissue in the brain and Divided into two categories: 1.non cancerous and 2.cancerous (Malignant) that into two categories : 1.Primary:originate in the brain itself. 2.Metastatic or Secondary:come from another part of the body (e.g. lung or breast etc).Glioblastoma Multiforme(GBM) is both the most common and most aggressive primary brain tumor and is characterized by a poor prognosis, resistance to standard therapies, and a highly mutated tumor genome.GBMs generally arise in the cerebral hemispheres, and less frequently in the brainstem and spinal cord.Among the most common defects in GBM are epidermal growth factor receptor (EGFR) amplification, loss of heterozygosity (LOH) on chromosome 10q23, and phosphate and tensin homologue (PTEN) mutation in primary GBMs and TP53 mutations in secondary GBMs. MicroRNAs (miRNAs) that have (20-22nucleotide) represent an emerging class of molecules that play significant roles in a number of key cellular processes associated with GBM.multiple miRNAs that are differentially expressed in GBM compared to normal tissues.MiRNA-21, 181, 221,137, 124, 128, and 451 are among the most aberrantly expressed miRNAs in GBM.Some miRNA In GBM,such as mir-21 is known to target multiple components of the p53, transforming growth factor- β (TGF- β),and mitochondrial apoptosis tumor-suppressive pathways.The downregulation of miRNA-21 with a lipofectamine-mediated anti-sense-