

عنوان مقاله:

The effects of pre-treatment with olibanum and its constituent, boswellic acid on synaptic plasticity impairments induced by lipopolysaccharide in rats

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خلاصه مقاله:

Objective: Olibanum (OLIB) and its component boswellic acid (BOSA) are suggested to have anti-inflammatory, anti-oxidant and neuroprotective effects. In the present work, we examined effect of OLIB, and BOSA on the synaptic plasticity impairment and oxidative stress indicators in a rat model of neuro-inflammation induced by lipopolysaccharide (LPS). **Materials and Methods:** Forty rats were divided into the following four groups: (1) Control, (2) LPS, (3) OLIB (200 mg/kg), and (4) BOSA (10 mg/kg). The animals were pre-treated with OLIB extract, BOSA or the vehicle 30 min before LPS (1 mg/kg) administration, for 6 days. On the 6th day, electrophysiological recording was done. Long-term potentiation (LTP) from CA1 area of hippocampus was assessed. The animals were then sacrificed and their brains were removed for evaluation of the levels of interleukin-6 (IL-6), nitric oxide (NO) metabolites, malondialdehyde (MDA), thiol, superoxide dismutase (SOD) and catalase (CAT) in the cortex. **Results:** Administration of LPS decreased amplitude ($p < 0.001$) and slope ($p < 0.01$) of field excitatory postsynaptic potential (fEPSP). Pre-treatment enhanced these parameters (p Conclusion: The results showed that OLIB and BOSA could improve synaptic plasticity impairment induced by LPS as shown by a decrease in an inflammation indicator along with the .anti-oxidant effects

کلمات کلیدی:

Olibanum, Boswellic acid, Lipopolysaccharide, Synaptic plasticity, Inflammation, Oxidative stress

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