
**Abstract**

Echinacea purpurea L. is a medicinal plant originally from North America. It has become a commonly used herbal medicine worldwide because it contains various biologically active compounds. This study was designed to investigate the anti-inflammatory effects of essential oils from *E. purpurea* in both mice and rats. The extract was obtained from flower of *E. purpurea* by steam distillation. The anti-inflammatory potential was evaluated in vivo by using different animal models such as xylene-induced mouse ear edema, egg-white-induced rat paw edema, and cotton-induced granuloma tissue proliferating inflammation in mice. The serial dosages were used in vivo: the low dosage, the medium dosage and the high dosage. The low, medium and high dosages of extracts produced inhibitions of 39.24%, 47.22% and 44.79% respectively in the ear edema induced by xylene when compare with the control group. Only the high dosage group showed statistically significant inhibition (48.51%) of paw edema formation induced three hours by egg white compared with the control group (P<0.01). Moreover, the granulation formation was also significantly reduced the most by 28.52% in the high dose groups compared with the control group (P <0.05). The pro-inflammatory cytokines such as IL-2, IL-6 and TNF-α in the blood were reduced in the treated groups. The essential oils from extracts of *E. purpurea* have anti-inflammatory effects.