Licochalcone A was isolated from the roots of *Glycyrrhiza inflata* and evaluated for its anti-inflammatory activity in xylene-induced mice ear edema and carrageenan-induced paw edema tests. At the same time, the inhibition of prostaglandin biosynthesis by licochalcone A was also studied in lipopolysaccharide (LPS)-induced mouse macrophage cells. At 5 mg/ear, licochalcone A showed remarkable effects against acute inflammation induced by xylene, and at the doses of 2.5, 5, 10 mg/kg (p.o.), licochalcone A reduced significantly paw edema induced by carrageenan compared to the control at the fourth hour. Both COX-2 activity and expression were significantly inhibited by licochalcone A at all the test doses. Therefore, licochalcone A could be a useful compound for the development of new anti-inflammatory agents.

**Key words:** Licochalcone A, *Glycyrrhiza inflata*, Anti-Inflammatory Activity