Chemical composition and anti-inflammatory activity of algerian thymus vulgaris essential oil
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Abstract:
This work aims to elucidate the chemical composition of two essential oil (EO) samples obtained from the leaves of Thymus vulgaris L. (Lamiaceae) collected in two regions of Northwestern Algeria (Tlemcen and Mostaganem) and to assess their in vivo acute toxicity and anti-inflammatory activity. Sixty-six compounds could be identified by means of simultaneous GC-FID and GC-MS, accounting for 99.3% of total thyme oil of Mostaganem (EO.TM) and 99.0% of Tlemcen (EO.TT). In both samples, thymol was the major component, amounting to 59.5% (EO.TM) and 67.3% (EO.TT) of the total oil. EO.TT proved to be acutely toxic to mice at a dose of 4500 mg/kg p.o., whereas EO.TM did not show signs of acute toxicity, even at the highest dose tested (5000 mg/kg p.o.). Both EO samples were proven to possess anti-inflammatory activities, significantly reducing carrageenan-induced paw edema in mice (after 6 hours at a dose of 400 mg/kg p.o.) at 58.4% for EO.TT and 50.4% for EO.TM, respectively. In conclusion, it could be demonstrated that EOs of T. vulgaris exhibit a considerable in vivo anti-inflammatory activity at non-toxic doses.

Keywords: anti-inflammatory activity, essential oil, Thymus vulgaris,