Anti-Inflammatory Activity of Hydroxydihydrocarvone

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Hydroxydihydrocarvone (HC) is a synthetic intermediate obtained by hydration of the natural compound (*R*)-(–)-carvone. The aim of the present study was to investigate the possible anti-inflammatory activity of orally administered HC. Toxicity, motor coordination, tail immersion test, as well as carrageenan-induced paw edema and myeloperoxidase (MPO) activity or peritonitis were all evaluated in rodents. HC was force-fed to the animals 1 h before the stimulus. The lethal dose 50% (LD_{50}) of orally administered HC was 1259 mg/kg. No changes in motor coordination were recorded in HC-treated mice in the rotarod test. The time of response to the thermoceptive stimulus in the tail immersion test was longer in HC-treated animals (50, 100, and 200 mg/kg) than in the vehicle-treated group. HC also significantly decreased the area under curve of carrageenan-induced rat paw edema at 100 and 200 mg/kg and MPO activity at 200 mg/kg. Carrageenan-induced neutrophil recruitment to the peritoneal cavity was significantly reduced by HC at doses of 100 or 200 mg/kg, but not 50 mg/kg. These findings demonstrate that orally administered HC exerts antinociceptive and anti-inflammatory activities in rats and mice.

Key words: Terpene, Essential Oils, Inflammation