Orofacial Analgesic-Like Activity of Carvacrol in Rodents

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Carvacrol (CARV) is a phenolic monoterpene present in the essential oil of several aromatic spices. The purpose of the present study was to evaluate the antinociceptive effect of CARV on formalin-, capsaicin-, and glutamate-induced orofacial nociception in mice. Male mice were pretreated with CARV [25, 50, and 100 mg/kg body weight (BW), intraperitoneal (i.p.)], morphine (5 mg/kg BW, i.p.), or vehicle (distilled water + one drop of 0.3% cremophor in distilled water), before formalin (20 μl, 2%), capsaicin (20 μl, 2.5 μg), or glutamate (40 μl, 25 μM) was injected into the right upper lip. Our results revealed that i.p. pretreatment with CARV was effective in reducing the nociceptive face-rubbing behaviour in both phases of the formalin test and also produced a significant antinociceptive effect at all doses in the capsaicin and glutamate tests. Further, we showed that the action of CARV on the central nervous system (CNS) did not affect these results, since this compound did not exert a significant CNS-depressant effect, as shown by the pentobarbital-induced hypnosis. Our results suggest that CARV might represent an important tool for the treatment of orofacial pain.

Key words: Monoterpene, Carvacrol, Orofacial Pain