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Analgesic and antiinflammatory activity of constituents of Cannabis sativa L.

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Abstract

Two extracts of **Cannabis sativa** herb, one being cannabinoid-free (ethanol) and the other containing the cannabinoids (petroleum), were shown to inhibit PBQ-induced writhing in mouse when given orally and also to antagonize tetradecanoylphorbol acetate (TPA)-induced erythema of mouse skin when applied topically. With the exception of cannabinol (CBN) and delta 1-tetrahydrocannabinol (delta 1-THC), the cannabinoids and olivetol (their biosynthetic precursor) demonstrated activity in the PBQ test exhibiting their maximal effect at doses of about 100 micrograms/kg. delta 1-THC only became maximally effective in doses of 10 mg/kg. This higher dose corresponded to that which induced catalepsy and is indicative of a central action. CNB demonstrated little activity and even at doses in excess of 10 mg/kg could only produce a 40% **inhibition** of PBQ-induced writhing. Cannabinoid (CBD) was the most effective of the cannabinoids at doses of 100 micrograms/kg. Doses of cannabinoids that were effective in the analgesic test orally were used topically to antagonize TPA-induced erythema of skin. The fact that delta 1-THC and CBN were the least effective in this test suggests a structural relationship between analgesic activity and antiinflammatory activity among the cannabinoids related to their peripheral actions and separate from the central effects of delta 1-THC.

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