



Effects of cannabinoids on the anxiety-like response in mice

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Abstract:

Several pieces of anatomical, biochemical and pharmacological evidence indicate that the endocannabinoid system *via* CB₁ receptors is implicated in the control of emotional behavior. However, previous studies have reported unclear and contradictory results concerning the role of cannabinoids in anxiety. The aim of the present study was to examine the influence of the cannabinoid agonist WIN 55,212-2 (1 and 5 mg/kg), the CB₁ antagonist AM 281 (1, 2 and 4 mg/kg), the inhibitor of anandamide hydrolysis AACOCF₃ (1 and 4 mg/kg) and the inhibitor of anandamide transporter AM 404 (1 and 4 mg/kg) on the anxiety-like response in mice in the light/dark box test. WIN 55,212-2 (5 mg/kg) induced the anxiogenic-like effect accompanied by motor inhibition, AACOCF₃ (4 mg/kg) induced the selective anxiolytic-like effect, whereas AM 404 and AM 281 were without effect. Pretreatment with AM 281 (2 mg/kg) blocked the anxiogenic-like and sedative responses induced by WIN 55, 212-2, as well as the anxiolytic-like effect of AACOCF₃. These results support the hypothesis that the endocannabinoid system is involved in the regulation of anxiety-like behavior, and also suggest that the inhibitors of anandamide hydrolysis might be potential anxiolytic drugs.

Key words:

cannabinoid, CB₁ receptor, light/dark box test, anxiety, WIN 55,212-2, AM 281, AM 404, AACOCF₃
