SHORT COMMUNICATION

LOCOMOTOR HYPOACTIVITY AND MOTOR DISTURBANCES – BEHAVIORAL EFFECTS INDUCED BY INTRACEREBELLAR MICROINJECTIONS OF DOPAMINERGIC DA-D2/D3 RECEPTOR AGONISTS

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In the light of recent findings, DA-D3 dopamine receptors with an unclear physiological function are present in the cerebellar cortex. Our preliminary results seem to indicate that bilateral injection of 7-OH-DPAT, a DA-D2/D3 receptor agonist (1 and 10 μg/0.5 μl), to lobule 9/10 of rat cerebellar cortex reduces spontaneous locomotor activity (hypolocomotor effects) and induces balance and motor coordination disturbances, respectively. Similar effects can be observed in the case of analogous microinjection of the DA-D2/D3 agonist pramipexole. In earlier studies, peripheral (ip) injection of nafadotride (0.6 mg/kg), a D3 receptor antagonist, neither affected per se spontaneous motor activity, nor modified the above described effects of 7-OH-DPAT. Participation of cerebellar DA-D3 and DA-D2 receptors in hypolocomotor effects, as well as putative participation of other receptors in the generation of motor disturbances, has been discussed.

Key words: cerebellum, microinjections, dopamine D2/D3 receptors, locomotor activity, motor disturbances, 7-OH-DPAT, pramipexole, nafadotride