ANXIOLYTIC- AND ANTIDEPRESSANT-LIKE EFFECTS OF 7-OH-DPAT, PREFERENTIAL Dopamine D3 RECEPTOR AGONIST, IN RATS

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The aim of the present study was to examine a potential anxiolytic- and antidepressant-like action of (+)-7-hydroxy-2-(di-n-propylamino)tetralin hydrobromide (7-OH-DPAT), a preferential dopamine D3 receptor agonist, and N-[4-[4-(2-methoxyphenyl)-1-piperazinyl]butyl]-2-naphthylcarboxamide (BP 897), a partial dopamine D3 receptor agonist, in male Wistar rats. Diazepam or imipramine were used as reference compounds. The anxiolytic-like effect of those drugs was tested in the elevated plus-maze test. The antidepressant-like effect was estimated using the forced swimming test. The obtained results showed that 7-OH-DPAT at low doses and BP 897 (like diazepam) induced anxiolytic-like effects in the elevated plus-maze test. 7-OH-DPAT, BP 897 and diazepam, tested at the doses effective in the model of anxiolytic-like actions, did not affect motor coordination. Moreover, 7-OH-DPAT at higher doses, like imipramine, showed antidepressant-like effect, significantly reducing immobility time in the forced swimming test. Combined treatment with 7-OH-DPAT and imipramine induced a stronger effect in Porst’s test than administration of either drug alone, but did not increase the locomotor activity. In contrast, BP 897 was inactive in the forced swimming test when given alone but it potentiated the antidepressant-like effect of imipramine.

These data suggest that preferential D3 receptor agonists may play a role in the therapy of anxiety and/or depression, however, further studies are necessary to elucidate the mechanism of these actions.

Key words: 7-OH-DPAT, BP 897, elevated plus-maze test, forced swimming test, rat

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