



Fund “Nauka” Project № 11009 Resume

“Involvement of cannabinoid CB1 receptors in depressive states”

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The effects of ligands of cannabinoid CB1 receptors (agonist HU-210 and antagonist SR 141716A) on some behavioral reactions in an experimental model of depression – bilateral olfactory bulbectomy (OBX) have been studied.

The results showed modulating effects of HU-210 и SR 141716A on the depressive-like state in OBX rats (exploratory and locomotor activity, anxiety, nociception, learning and memory). After introduction of the i.c.v. substances in the right lateral ventricle of rats for 7 days, HU-210 has decreased the motor activity of OBX rats. The disturbed habituation has been normalized (which is interpreted as a manifestation of antidepressant effect). The substances provides anxiolytic and antinociceptive effect, and improved learning and memory, while SR 141716A increases locomotor activity, has anxiogenic and nociceptive effects and impairs learning and memory.

The experiments with chronic oral administration Rimonabant (SR 141716A) for 14 days before and after OBX showed that the treatment in the period before OBX did not affect the behavior of OBX rats, while after OBX augmented the depressive-like state, induced by the bulbectomy.

The results reveal an involvement of CB1 receptors in the development of the depressive-like state.

Published articles:

Comptes rendus de l’Academie bulgare des Sciences,

<http://www.proceedings.bas.bg/>

1. Marinov M., M. Ivanova, S. Belcheva, I. Belcheva, N. Negrev, R. Tashev. Influence of cannabinoid CB₁ ligands on exploratory behavior and locomotor activity in rats. Comptes rendus de l’Academie bulgare des Sciences, 2011, 64 (12) 1785-1792
2. Marinov M., M. Ivanova, S. Belcheva, I. Belcheva, D. Kochev, R. Tashev. Effects of acutely applied cannabinoid CB1 ligands on nociception in rats with a model of depression. Comptes rendus de l’Academie bulgare des Sciences, 2013, 66 (6), 877-882.

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3. Marinov M., M. Ivanova, S. Belcheva, I. Belcheva, R. Tashev. Effects of acutely applied cannabinoid CB1 ligands on learning and memory in rats with a model of depression. Comptes rendus de l'Academie bulgare des Sciences, 2013, 66 (9), 1331-1338.

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Scripta Scientifica Medica (in press)

<http://press.mu-varna.bg/ojs/index.php/ssm/issue/archive>

4. Marinov M., M. Ivanova, S. Belcheva, I. Belcheva, Negrev, R R. Tashev. CB1 ligands modulate learning and memory of OBX rats, Scripta Scientifica Medica, 2015