

## CHRONIC TREATMENTS WITH HALOPERIDOL AND CLOZAPINE ALTER THE LEVEL OF NMDA-R1 mRNA IN THE RAT BRAIN: AN *IN SITU* HYBRIDIZATION STUDY

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*Chronic treatments with haloperidol and clozapine alter the level of NMDA-R1 mRNA in the rat brain: an in situ hybridization study.* K. OSSOWSKA, M. PIETRASZEK, J. WARDAS, M. DZIEDZICKA-WASYLEWSKA, D. NOWICKA, S. WOLFARTH. Pol. J. Pharmacol., 2002, 54, 1–9.

The aim of the present study was to examine the influence of 3-month administration of the typical neuroleptic haloperidol (1 mg/kg/day) and the atypical one clozapine (30 mg/kg/day) on the expression of the NMDA-R1 mRNA in different brain structures using *in situ* hybridization in rats. A long-term treatment with haloperidol decreased the NMDA-R1 mRNA level in intermediate and caudal parts of the caudate-putamen and in more caudally localized regions of parietal and frontal cortices, but increased it in the CA1 region of the hippocampus. No significant changes in the nucleus accumbens, insular cortex, CA3 and dentate gyrus of the hippocampus were found after haloperidol administration. Clozapine did not influence the NMDA-R1 mRNA expression in the hippocampus, as well as in the intermediate and caudal regions of the caudate-putamen, but significantly increased it in the rostral region of the latter structure, in the nucleus accumbens and insular cortex. The present study suggests that both these neuroleptics influence the expression of the mRNA of the NMDA-R1 subunit in brain structures which are thought to be important for development of psychotic symptoms.

**Key words:** *chronic treatment, haloperidol, clozapine, NMDA receptors, NMDA-R1 mRNA, in situ hybridization*

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