SHORT COMMUNICATION

CHRONIC TREATMENT WITH CITALOPRAM DOES NOT AFFECT THE EXPRESSION OF $\alpha_1$-ADRENERGIC RECEPTOR ($\alpha_1$-AR) SUBTYPES

Grzegorz Kreiner, Adam Bielawski, Agnieszka Zelek-Molik, Marta Kowalska, Irena Nalepa

Laboratory of Intracellular Signaling, Department of Biochemistry, Institute of Pharmacology, Polish Academy of Sciences, Sienkiewicza 12, PL-31-343 Kraków, Poland


We previously reported that chronic treatment with imipramine and electroconvulsive shock up-regulate the density and $\alpha_{1A}$-adrenergic receptor ($\alpha_{1A}$-AR) mRNA level in the rat prefrontal cortex, while the expression of the $\alpha_{1B}$ subtype was unchanged. The present study examined whether repeatedly given citalopram, a selective serotonin reuptake inhibitor, induces any changes in the expression of $\alpha_{1A}$ and $\alpha_{1B}$ subtypes of $\alpha_1$-AR. The receptors density was assessed in the rat cerebral cortex by $[^3H]$prazosin binding while the expression of $\alpha_{1A}$ and $\alpha_{1B}$ receptors' mRNA was measured in the rat prefrontal cortex by Northern blot analysis or competitive reverse transcription and polymerase chain reaction (RT-PCR), respectively. We did not find any changes in $\alpha_{1A}$- and $\alpha_{1B}$-AR density or mRNA expression in the investigated rat brain structures of citalopram-treated rats. Thus, it seems that up-regulation of $\alpha_{1A}$-AR subtype is characteristic only of those antidepressant agents in which a noradrenergic component is involved in their pharmacological mechanism of action.

Key words: citalopram, $[^3H]$prazosin binding, mRNA expression, brain cortex, rat

# correspondence: e-mail: nialepa@cyf-kr.edu.pl