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EFFECT OF ANTIDEPRESSANTS ON THE PHOSPHOLIPASE A_2 ACTIVITY IN PLASMA MEMBRANES OF THE RAT BRAIN CORTEX

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The aim of the present study was to establish whether antidepressants (ADs) of potentially different chemical structure and mechanisms of action affected the phospholipase A_2 (PLA_2) activity in plasma membranes of the rat brain cortex. It was decided to evaluate the influence of imipramine (IMI), amitriptyline (AMI), fluvoxamine (FLU), mianserin (MIA) and tianeptine (TIA) on PLA_2 activity after an acute and long-term (4 weeks) drug administration. To study the time-related effects of FLU on PLA_2 activity, animals were treated for 1, 7, 14 and 28 days. The experiments were performed on male Wistar rats. The PLA_2 activity was determined by the method of Strosznajder and Strosznajder as well as Jelsema with slight modifications. It was shown that ADs significantly changed the PLA_2 activity in plasma membranes of the rat brain cortex and the effects depended on the dose, time of administration and the structure of the drug. Tricyclic ADs, both classic (IMI and AMI) as well as atypical (e.g. TIA) inhibited PLA_2 activity. It seems that FLU was the only antidepressant, which induced either inhibition or activation of PLA_2 depending on time of administration. It may be suggested that PLA_2 appears to be a common target for drugs showing quite different mechanisms of action.

Key words: *phospholipase A_2, antidepressants, rats, brain cortex, plasma membranes*

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