IN VITRO EFFECTS OF METHYLMERCURY ON ADENOSINE DEAMINASE (EC 3.5.4.4) FROM CEREBRAL CORTEX AND HIPPOCAMPUS OF YOUNG RATS.

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Methylmercury (MeHg) is an environmental contaminant that continues to cause risk to human health. The oxidative stress and brain inflammatory is related to the mechanism in the neurotoxicity of heavy metals. Adenosine deaminase (ADA) is an important enzyme that plays a relevant role in purine and immune responses.The aim of the present investigation was to evaluate the in vitro (0,05 - 100 µM) effects of MeHg on the ADA activity of homogenates from cerebral cortex and hippocampus of developing rats (7days of life).The results showed that MeHg at 50 and 100 µM significantly decreased the ADA activity (37,32% and 67,86 %, respectively) from cerebral cortex of young rats. At same time, in hippocampus, MeHg significantly decreased the ADA activity, 46,23% and 75,71 %, at 50 and 100 µM, respectively. MeHg levels cause the rapid plasma membrane lysis resulting loss of mass and consequently decrease of enzyme activity of ADA. Disruption of the integrity of immune function is critical for the physiological development of the nervous system. The mechanisms involved is currently under investigation in our group. This work was supported by Fundação de Amparo à Pesquisa do Estado do rio Grande do Sul(FAPERGS). Key words: adenosine deaminase – methylmercury - rats