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### Lead exposure impairs NMDA agonist-induced no production in pyramidal hippocampal cells

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#### Abstract:

Chronic exposure to Lead (Pb) affects neural functions in central nervous system (CNS) particularly the learning and memory. On the other hand, alteration of calcium level in the CNS results in activation of NOS where it is expected to increase nitric oxide level in hippocampus. In this study the role of Lead exposure in NMDA induced NO production in pyramidal hippocampal cells (CA1HP) was investigated. The NO level was determined by measurement of concentration of nitrite and nitrate as NO products using the methb production at 401 nm. The ACBD (NMDA agonist)-induced NO level was almost reduced to the control level (2.5 nM) in the presence of 10 and 100 nM of Lead acetate. Lead acetate at concentrations which normally results in chronic toxicity did not increase the nitric oxide (NO) production by CA1HP. One reason for this finding could be the interaction of Lead with NMDA receptors due to similarity of Pb<sup>2+</sup> to Zn<sup>2+</sup> ion. Another reason may be related to direct interaction of Lead with NMDA receptors that inhibit the stimulated NO production.

#### Keywords:

ACBD . NMDA agonist

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