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## Ampakine Farampator (CX691) improves cognitive impairment and hippocampus BDNF levels in a rat model of A $\beta$ 1-42-induced Alzheimer's disease

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An emerging body of data suggests that dysfunction of the glutamatergic system and AMPA receptors has been implicated in Alzheimer's disease (AD). Because AMPA receptor plays a critical role in the regulation of hippocampus synaptic plasticity, the positive modulation of this receptors may rescue learning and memory deficits in AD. In the present study, by using the Morris water maze paradigm, we explored the pro-cognitive effect of Farampator, a specific positive allosteric modulator of the AMPA-type glutamate receptors in rat model of AD produced by injection of amyloid-beta1-42 (A $\beta$ 1-42) in to the hippocampus. Furthermore, we investigated the effects of Farampator on brain derived neurotrophic factor (BDNF) protein expression in the hippocampus tissue. Results show that intrahippocampal injection of A $\beta$ 1-42 caused learning and memory deficits in rats subjected to the Morris water maze and decreased BDNF expression in the hippocampus. Also we found that treatment with farampator for 10 days (0.3 mg/kg, twice a day) improved the performance of Alzheimeric rats in Morris water navigation task with increased level of BDNF protein. Altogether, our data suggest that Farampator ameliorate A $\beta$ 1-42-induced learning deficits, at least part, via up-regulation of BDNF protein in the hippocampus. The results of this investigation may shed light on a possible therapeutic approach to treating and control the progression of AD.

### Biography

Ayat Kaeidi has started his PhD at the age of 32 years from Rafsanjan University of Medical Sciences. He has published more than 12 papers in reputed journals.

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