

Zinc is one of the most abundant divalent metal ion in the central nervous system, where it serves as regulator of many proteins (channels, receptors, pump...), product of neurosecretion or cofactor. The highest concentration of zinc in synaptic vesicles of the specific neurons, which are called zinc-containing neurons and it is subset of glutamatergic neurons. The cumulation of zinc in the synaptic neurons is arranged mostly by transporter ZnT3. A concentration of zinc in the synaptic's vesicles is about 1mmol/l and maybe higher. The zinc-containing neurons are mostly in forebrain, where create complex and neuronal network in mammalian's brain, which conect most of cerebral cortex and limbic system (Frederickson et al. 2000).

Zinc is released from synapses after a stimulation (Vogt et al. 2000) and then it affects a lot of receptors, for example postsynaptic NMDA receptors (Koh & Choi 1994) and Ca<sup>2+</sup> permeable AMPA and cainate receptors (Hong Z. Yin 1995), voltage-gated Ca<sup>2+</sup> channels (Atar et al. 1995) and GABA<sub>A</sub> receptors (Ruiz et al. 2004).

This bachelor thesis summarizes the efekt Zn<sup>2+</sup> on the ionotropic glutamate receptors. It is mostly adressed on the NMDA receptors, which are the most affected by zinc. The first chapter is about structure of ionotropic glutamate receptors, which is followed up other chapters, which are about zinc's effects on individual receptors and it's subtype.