ABSTRACT

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Testing the efficacy of potential therapeutics for Alzheimer,s disease

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The aim of this thesis was to find out whether already implemented Ellman's method, which is used to analyse irreversible inhibitors AChE, is going to be a suitable technique for measuring reversible inhibitors. Furthermore, the efficiency of newly synthesized AChE inhibitors was established. These inhibitors will be used for treating AD or as prophylaxis against neural paralytic substances. Moreover, it was compared affect the efficacy of AChE inhibitors after intramuscular and intraperitoneal administration.

The measurements were done in vivo on potkan species Wistar. In the first experiment standard AChE (tacrin, 7-MEOTA, donepezil, rivastigmin) inhibitors were applied to verify the method. In the second experiment the newly synthesizes AChE (K 298, K 344, K 474) inhibitors were medicine.

The results confirmed the effectiveness of the tested method on commonly used inhibitors such as donepezil and rivastigmin. Out of the newly synthesized K 298, K 344 and K 474 inhibitors none was proven to have any significant inhibiting activity.

Key words: acetylcholinesterase, acetylcholinesterase inhibitors, Alzheimer disease, cholinergic system, Ellman method