ABSTRACT

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Title of Thesis: **Synthesis of novel quinazoline derivatives as a potential multipotent therapeutics against Alzheimer's disease**

Alzheimer's disease (AD) is a severe neurologic disorder. Current treatments only temporarily delay the progression of disease. The main limiting factor for developing of new therapeutic compounds is the simultaneous presence of multiple pathologies. Thus, a new group of potential drugs called **multi-target directed ligands** (MTDLs) emerged as an alternative option to combat AD. To this date, dozens of MTDLs have been published. As part of the experimetnal section of this thesis, a series of small molecules based on quinazoline scaffold was rationally designed with the intention to influence the activity of **acetylcholinesterase**, **butyrylcholinesterase**, **monoamine oxidase A** and **B** (MAO-A/MAO-B), and the **GluN1/GluN2B** subunit of *N*-methyl-D-aspartate receptor (NMDAR). Subsequently twenty-four new quinazoline derivatives were synthesized, and biologically evaluated. The overall results highlighted compound **II-6h** ((5E)-8-chlor-*N*-cyklohexyl-3-methyl-1-methyliden-1*H*,2*H*,3*H*,5*H*-imidazo[1,2-*a*]chinazolin-5-imin) as the best derivative with an inhibitory effect on MAO-B, antagonism action to NMDAR, an acceptable antiproliferative effect, and potential to penetrate the BBB. This work thus contributes to the development of MTDL, a new direction in drug development for AD, which aims to influence multiple pathological aspects simultaneously.