Novel conjugates of aminoadamantanes with carbazole derivatives as potential multitarget agents for AD treatment

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A new group of compounds, promising for the design of original multitarget therapeutic agents for treating neurodegenerative diseases, based on conjugates of aminoadamantane and carbazole derivatives was synthesized and investigated. Compounds of these series were found to interact with a group of targets that play an important role in the development of this type of diseases. First of all, these compounds selectively inhibit butyrylcholinesterase, block NMDA receptors containing NR2B subunits while maintaining the properties of MK-801 binding site blockers, exert microtubules

stabilizing properties, and possess the ability to protect nerve cells from death at the calcium overload conditions. The leading compound C-2h has been shown the most promising effects on all analyzed parameters. Thus, these compounds can be regarded as promising candidates for the design of multi-target disease-modifying drugs for treatment of AD and/or similar neuropathologies.