Neuroprotective therapeutic strategy against neuronal damage

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Abstract: Currently, the methods of treating neurodegenerative diseases are not fully effective. The available drugs are not able to stop the disease process, but to slow it down, [1] therefore, research on new compounds and new approaches to treating these disorders is still ongoing. We are looking for compounds with neuroprotective properties that will prevent cell death as well as restore the function and number of damaged neurons [2].

The presented research focuses on developing an effective treatment of neurodegenerative diseases based on the compound with neuroprotective properties.

A multi-target antipsychotic compound, D2AAK1, was used in the conducted research. The experiments were carried out on mouse hippocampal neuron cells (HT-22), neuroblastoma cells (SH-SY5Y) and male Swiss mice. The conducted studies showed that the compound causes an increase in cell proliferation and improves memory in mice models. Moreover, the compound caused a reduction in the level of reactive oxygen species (ROS), nitrogen (RNS), a decrease in intracellular calcium levels (Ca2+) and the level of DNA damage in the form of micronuclei (MN).

Summarizing, the obtained preliminary results are promising for the future development of treatment for neurodegenerative diseases.

References