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Verification of Virtual Screening Results for 5-HT$_6$ Receptor in *In Vitro* Experiments.

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There are a lot of data indicating pro-cognitive properties and potential therapeutic activity of 5-HT$_6$ receptor ligands which can be beneficial, among others, in Alzheimer's disease [1], schizophrenia [2] and depression [3].

In the present work we used virtual screening (VS) of an in house (Department of Medicinal Chemistry) library of over 1000 compounds to identify active 5-HT$_6$ receptor agents.

In silico studies began with the development of homology models of transmembrane domain of 5-HT6 receptor; next, the Support Vector Machine (SVM) method was applied to fingerprint representation of compounds library for preselection of derivatives; and finally 505 agents selected by SVM were docked to the developed homology models. As a result of VS more than 200 compounds with potential 5-HT$_6$ receptor activity were identified.

The VS results were verified in *in vitro* experiments and K$_i$ values for a selected group of 33 structurally related compounds (in which VS indicated 8 active ligands) were measured.

[1]   Mitchell E. S., Neumaier J. F.:*Pharmacol. Biochem. Be.* 8 (2008),291.
[2]   Remington G.: *Prog. Brain Res.* 1/2 (2008),117.
[3]   Leonard B. E.: *Psychother. Psychosom*. 65 (2) (1996), 66.