

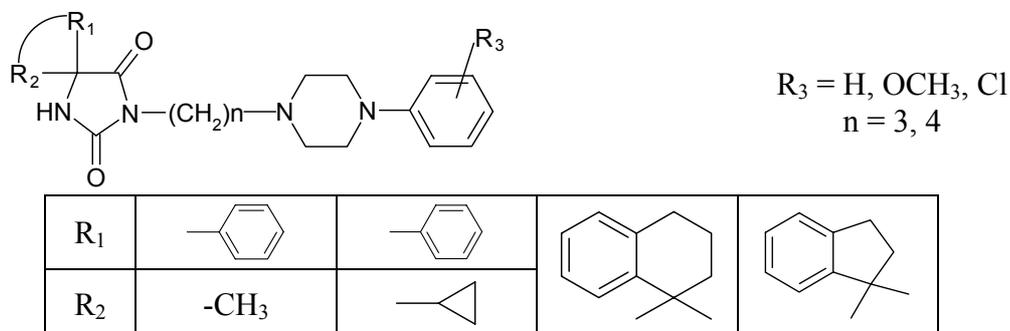
## NEW ARYLPIPERAZINYLALKYL DERIVATIVES OF 5,5-DISUBSTITUTED HYDANTOINS AS CNS RECEPTOR LIGANDS\*

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The important role in recognition of serotonin receptors 5-HT<sub>1A</sub> and 5-HT<sub>2A</sub>, and stabilization of complex ligand – receptor acts the arylpiperazine ring system. Although the terminal amide moiety meaningfully increases affinity to these receptors, its role is still not fully explain [1].

In our earlier studies, we synthesized both 5,5 – dialkyl, 1',5-cyclohexanespiro- and 1',5-cyclopentanespiro hydantoin connected to phenylpiperazinealkyl moiety, which exhibited high 5-HT<sub>1A</sub> or 5-HT<sub>2A</sub> affinity (K<sub>i</sub> = 17-33 or 34-37nM, respectively) [1]. In order to increase affinity to serotonin receptors the synthesis of new series of β-tetralonohydantoin were developed. Majority of obtained compounds have high affinity to 5-HT<sub>1A</sub> or 5-HT<sub>2A</sub> receptors (K<sub>i</sub> < 50 nM) and represent various profile of pharmacological activity [2,3]. As a continuation of our research new derivatives of α-tetralonohydantoin, α-indanohydantoin, 5-cyclopropyl-5-phenylhydantoin and 5-methyl-5-phenylhydantoin were also synthesized. The structure of these compounds was confirmed by <sup>1</sup>H-NMR spectral data as well as by C, H, N analysis. The purity of compounds was checked by TLC.



The newly synthesized compounds as soluble in water hydrochlorides have been tested *in vitro* for their 5-HT<sub>1A</sub> and 5-HT<sub>2A</sub> receptor affinities. Pharmacological *in vivo* studies directing to 5-HT<sub>1A</sub> and 5-HT<sub>2A</sub> receptor activity profile are in progress.

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