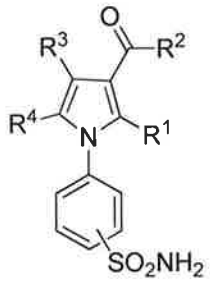
Pyrrole Derivatives Used As Modulators of Alpha7 NACHR

Field of the Invention:

The present invention is related to novel compounds of the general formula I,



I

their tautomeric forms, their stereoisomers, their isotopes, their pharmaceutically acceptable salts, polymorphs, solvates, optical isomers, clathrates, co-crystals, combinations with suitable medicament, pharmaceutical compositions containing them, methods of making of the above compounds , and their use as nicotinic acetylcholine receptor α7 subunit (α7 nAChR) modulator.

Background of the invention:

Cholinergic neurotransmission, mediated primarily through the neurotransmitter acetylcholine (ACh), is a predominant regulator of the physiological functions of the body via the central and autonomic nervous system. ACh acts on the synapses of the neurons present in of all the autonomic ganglia, neuromuscular junctions and the central nervous system. Two distinct classes of ACh target receptors viz. muscarinic (mAChRs) and the nicotinic (nAChRs) have been identified in brain, forming a significant component of receptors carrying its mnemonic and other vital physiological functions.

Neural nicotinic ACh receptors (NNRs) belong to the class of ligand-gated ion channels (LGIC) comprising of five subunits (α2-α10, β2-β4) arranged in heteropentameric (α4β2) or homopertameric (α7) configuration (Paterson D et al.,