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### Design and synthesis of novel flavonoids as GABA<sub>A</sub> receptor ligands

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Mental disorders are recognized as significant changes in behavioral or psychological patterns. The drugs treating mental disorders are employed on the basis of the neurotransmission in Central Nervous System (CNS), which plays very important in the psychiatric disorders. Thus, pharmacological knowledge GABA<sub>A</sub> receptor helps to design the new and potent ligands for the receptor. This led to the development of compounds more selective for various subunit combinations constitute the benzodiazepines binding site in GABA<sub>A</sub> receptor complex. Thus, with the advancement in the field of drug development for GABA<sub>A</sub> receptor, the designing of more target specific CNS active agents with fewer side effects become possible known as non-benzodiazepines. In this area, drugs leads of natural sources have been identified as important candidate. Flavonoids family provides important lead for the development of new potent and selective ligands for the GABA<sub>A</sub> receptor as compared to other lead molecules. Flavonoids are generally describing a broad collection of natural products that includes C6-C3-C6 carbon framework. As partial agonists they possess fewer side effects such as sedation, myorelaxation etc. QSAR models were generated which were validated on flavone derivatives. Moreover, new flavone derivatives were synthesized on the basis of generated QSAR models and characterized. Future research focuses on the selection of more potent and selective substituents as flavones derivatives.

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