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Novel tetrahydrocarbazole benzyl pyridine hybrids as potent and selective butryl cholinesterase inhibitors with neuroprotective and β-secretase inhibition activities

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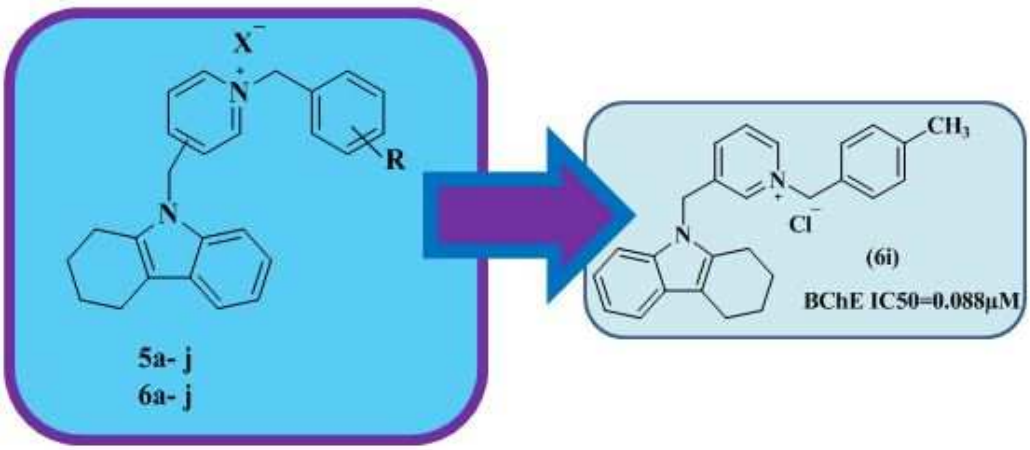

A series of dual binding site BuChE inhibitors were designed and synthesized based on 2,3,4,9-tetrahydro-1H-carbazole attached benzyl pyridine moieties. The most potent BuChE inhibitor was compound **6i** (IC_{50} = 0.088 μM). In addition, compound **6i** demonstrated neuroprotective and β-secretase inhibition activities.