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

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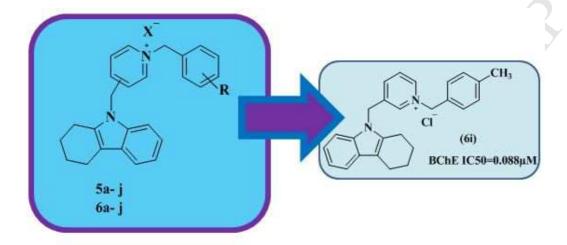
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### ACCEPTED MANUSCRIPT

# Novel tetrahydrocarbazole -benzyl pyridine hybrids as potent and selective butryl cholinesterase inhibitors with neuroprotective and $\beta$ -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<sub>50</sub> = 0.088  $\mu$ M). In addition, compound **6i** demonstrated neuroprotective and  $\beta$ -secretase inhibition activities.

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