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(57) Abstract :

The present invention relates to novel coumarin-carboxamide derivatives of general Formula 1 and Formula 2. The synthesized compounds were evaluated for their acetylcholinesterase (AChE) inhibition activity for the treatment of neurodegenerative disorders, particularly Alzheimer's disease. The compounds demonstrated potent AChE inhibitory activity with high binding affinity and favorable predicted EC₅₀ values. Lead compounds also exhibited low cytotoxicity in HEK293 cell lines and stable ligand-protein interactions as confirmed through molecular docking and molecular dynamics simulations. Thus, the compounds disclosed herein may serve as promising therapeutic agents for the management of Alzheimer's disease. Formula 1 Formula 2

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