

Cholinesterase Inhibitory Indole Alkaloids from the Bark of Rauvolfia reflexa

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Abstract : Two new, rauvolfine C and 3- methyl-10,11-dimethoxyl-6- methoxycarbonyl- β - carboline, along with five known indole alkaloids, macusine B, vinorine, undulifoline, isoresrpiline and rescinnamine were isolated from the bark of Rauvolfia reflexa. All the compounds showed good to moderate cholinesterase inhibitory activity with IC50 values in the range of 8.06 to 73.23 μ M, except rauvolfine C that was inactive against acetylcholinesterase (AChE). Rescinnamine, a dual inhibitor was found to be the most potent inhibitor among the isolated alkaloids against both AChE and butyrylcholinesterase (BChE). Molecular docking revealed that rescinnamine interacted differently on AChE and BChE, by means of hydrophobic interactions and hydrogen bonding.

Keywords : Rauvolfia reflexa, indole alkaloids, acetylcholinesterase, butyrylcholinesterase, molecular docking

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