Quinoline derivatives as memory enhancers: synthesis and pharmacological evaluation
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Memory or cognition dysfunction is a neurodegenerative disorder of brain, in which selective apoptosis of cholinergic neurons, in a specific region of the brain, leads to paucity of acetylcholine resulting to the loss of memory and learning functions (Cacabelos et al., 2000). The present study aims to develop some newer 6-aminoquinoline derivatives, as drug candidates, as potential acetylcholinesterase inhibitors. Acetanilide after nitration was subjected to Skraup's synthesis to yield 6-aminoquinoline (1) which was further treated with different carboxaldehydes e.g., pyridine-2-carboxaldehyde (1a), pyridine-3-carboxaldehyde (1b) and pyridine-4-carboxaldehyde (1c) to obtain the target compounds. These synthesized compounds were evaluated for their pharmacological activity of employing elevated plus-maze model (Sharma et al., 1992). Albino mice (LAKA strain) weighing 20-25 g of either sex, were used in evaluation. Finally, the biochemical study was carried out by Ellman's method to elucidate the mechanism of action of these compounds. Results clearly showed that compound (1c) has significantly higher anti-amnesic activity. While, biochemical study confirm its anti-cholinesterase action. With the above results it can be concluded that that new compound (1c) synthesised, was found to be a potent cognitive enhancer

Cacabelos, R. et al., Drugs Today 2000, 35 (7), 415-495.