ABSTRACT

The cholinergic hypothesis of Alzheimer’s disease (AD) has spurred the development of numerous structural classes of compounds with different pharmacological profiles aimed at increasing central cholinergic neurotransmission, thus providing a symptomatic treatment for this disease. Indeed, the only drugs currently approved for the treatment of AD cholinomimetics with the pharmacological profile of acetylcholinesterase inhibitors. Recent evidence of a potential disease modifying role of acetylcholinesterase inhibitors and M1 muscarinic agonists have led to a revival of this approach, which might be considered as more than a symptomatic treatment. From one of the research studies (Bratt et al. 1996), arecoline showed significant cognitive improvements in AD patients, this led to the development of many derivatives in this class and most of them have either cholinergic toxicity or lack of specificity to the M1 receptor. Therefore, this thesis attempts to different structural problems existing in currently available thiazolidin-4-one arecoline derivatives.