

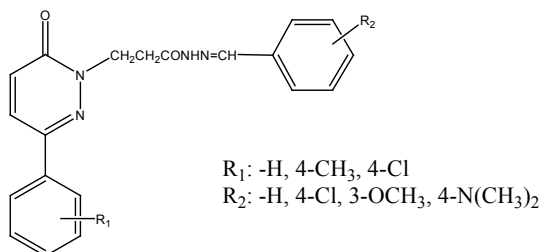
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Synthesis of some new benzalhydrazone derivatives and evaluation of their AChE inhibitory activity *in vitro*Ömer Faruk ÇÖL
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The hydrolysis of acetylcholine (ACh) which is a significant neurotransmitter for regulation of cognition in humans is the main task of AChE in cholinergic synapses. ACh level rises in the cholinergic synapses when these enzymes are inhibited. Thus, cholinesterase inhibitors are used in the treatment of various neuromuscular disorders which occur as a result of reduced cortical and hippocampal levels of ACh, such as Alzheimer's disease (AD) is a progressive neurodegenerative disorder characterized by synapse dysfunction, neuronal death, loss of memory and learning ability. Many researchers have synthesized hydrazone compounds as target structures and evaluated their biological activities. Hydrazones have been reported to possess, antibacterial, antifungal, antitubercular, antiviral and antimalarial activities. In this context, we synthesized new 6-substituted-3(2H)-pyridazinone-2-acetyl-2-(substituted/nonsubstituted benzalhydrazone) in order to investigate their *in vitro* AChE/BChE inhibitory activities by using the Ellman's method. Compounds have been synthesized starting from substitute/nonsubstitute acetophenon. 6-(4 substitute/nonsubstituephenyl)-3(2H)-pyridazinone was obtained from reaction of acetophenon with succinic anhydride. Ester derivatives were obtained from the reaction of the resulting pyridazinone compound with propyl bromoacetate. After that aceto-hydrazone derivatives were constituted by reaction of these ester derivative compounds with hydrazine hydrate and the aceto-hydrazides were changed to title compounds which have benzalhydrazone structure by using substitute/nonsubstitue benzaldehydes. Their structures were confirmed by IR, ¹H-NMR, ¹³C-NMR and mass spectral analysis data.



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