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A Synthetic Study of an Organophosphorous Compound as an Acetylcholinesterase Inhibitor

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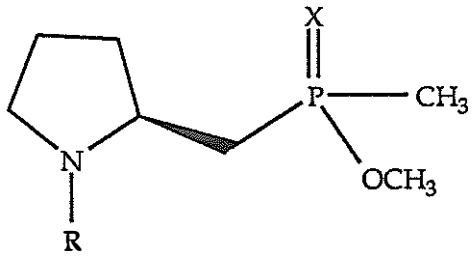
A SYNTHETIC STUDY OF AN ORGANOPHOSPHOROUS COMPOUND AS AN ACTYLCHOLINESTERASE INHIBITOR.

Sulay Jhaveri and Dr. Jeff Frick*, Department of Chemistry, IWU.

Acetylcholinesterase is the enzyme that catalyzes the hydrolysis of the neurotransmitter acetylcholine into acetic acid and choline. Based on the transition state of that reaction, and what is known about the structure of the enzyme, a study was conducted on the synthesis of organo-phosphorous compounds which could potentially inhibit the enzyme. The asymmetrical synthesis was initiated with a conformationally constrained compound, L-serine, and several methods of combining it with the thionyl phosphourous moiety were attempted in order to get the desired product.



R= H, CBZ, $(CH_3,)_2$
X = S, O

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