
Synthesis and study of some phosphorus nitrogen compounds and kinetic study of phosphorylation

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Hydrazides and their derivatives of the general formula $OR-C(=O)-NH-NH_2$ have important applications as monoamine oxidase inhibitor (M.O.A.I.) and form a new class of therapeutic agent in the treatment of mental depression beside their toxic character. Organophosphorus compounds are toxic because of their inhibition for cholinesterase enzyme. The aim of the present work is to synthesize organo-phosphorus hydrazides having expected M.O.A.I. and which may have important biological applications. Phosphorus hydrazides were prepared from phosphoramidite through a new technique by treating the latter with tertiary butyl hypochlorite as a chlorinating agent where N-chloramide derivatives obtained were rearranged through the treatment with alkali alkoxide. This reaction was generalised to be a new type of rearrangement and the mechanism of this reaction is discussed. The process of rearrangement could be illustrated by the following equation.