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The Interaction of Thioethynyl Esters of Thiophosphoric Acids with Cytochrom P 450

N. N. Godovikov^a; L. A. Vikhreva^a; T. A. Pudova^a; M. I. Kabachnik^a

^a A.N. Nesmeyanov Institute of Organoelement Compounds RAS, Moscow, Russia

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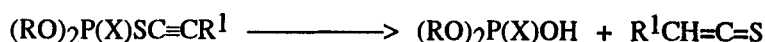
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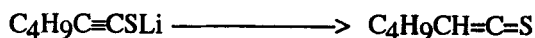
THE INTERACTION OF THIOETHYNYL ESTERS OF THIOPHOSPHORIC ACIDS WITH CYTOCHROM P 450

N.N. GODOVIKOV, L.A. VIKHREVA, T.A. PUDOVA, M.I. KABACHNIK
 A.N. Nesmeyanov Institute of Organoelement Compounds RAS, Moscow, Russia

We have shown that thioesters of phosphoric acids of general formula $(RO)_2P(X)C\equiv CR^1$, where $X=O$ or S , containing an acetylenic bond in α -position of the S -ester group has unusually high destructive effect on some isoforms of cytochrome P 450 of arthropods and mammals. These isoforms probably, participate in the process of inactivation of the acetylenic thioesters. We assume that this process may be thought as being a rupture of the $P-S$ bond, which leads to the formation of killer particles - alkylthioketenes.



The latter possess high reactivity and can destruct cytochrome P 450. This idea was supported by studying of the direct interaction of rat liver microsomes with lithium hexynyl mercaptide, which is readily hydrolyzed in medium under conditions of incubation with cytochrome P 450 to form the same killer particle - butylthioketene



This effect is not observed for the saturated analogues since their interaction results in the formation of metabolites which cannot be isomerized into thioketenes.