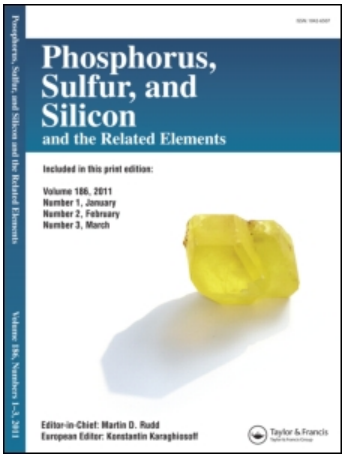

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The Interaction of Thioethynyl Esters of Thiophosphoric Acids with Cytochrom P 450

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

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We have shown that thioesters of phosphoric acids of general formula $(RO)_2P(X)C{\equiv}CR^1$, were X=O or S, containing an acetylenic bond in α-position of the S-ester group has unugually 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 rhe P-S bond, which leads to the formation of killer particles - alkylthioketenes.

$$(RO)_2P(X)SC{\equiv}CR^1 \longrightarrow (RO)_2P(X)OH + R^1CH{=}C{=}S$$

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 hysrolyzed in medium under conditions of incubation with cytochrome P 450 to form the same killer particle - butylthioketene

$$C_4H_9C{\equiv}CSLi \longrightarrow C_4H_9CH{=}C{=}S$$

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