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Synthesis and Reactivity of New 1,1-Diphenyl-2,5-Dihydrophospholium Salts

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SYNTHESIS AND REACTIVITY OF NEW 1,1-DIPHENYL-2,5-DIHYDRO-PHOSPHOLIUM SALTS

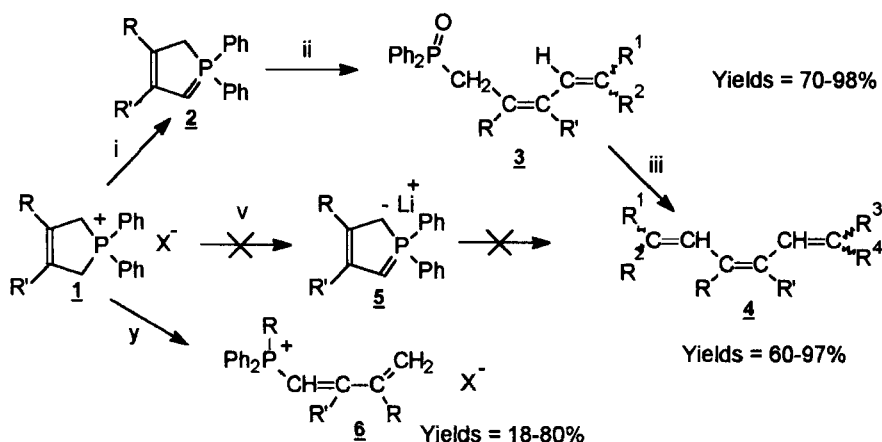
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Abstract: We describe the first synthesis of new 1,1-diphenyl-2,5-dihydro-phospholium salts of type **1**. These salts allow the access to interesting alkadienyl phosphine oxides **3** and trienes **4**. Unfortunately we could not obtain the strong nucleophilic diylide **5**.

Key words: *Dihydrophospholium Salts, ylides, Wittig Reaction, Trienes.*

In the course of our investigations on the highly nucleophilic diylides¹, we could not obtain the *destabilized* diylide **5**: a nucleophilic attack of the base occurs with ring opening. But the monoylide **1a** (R = R' = Me) is a really interesting synthetic precursor to provide with excellent yields and stereoselectivities phosphine oxides **3** and trienes **4**². The salt **1a** affords an unexpected alkylation on the phosphorus atom with ring opening.



SCHEME 1: Reactivity of salt **1**. R = R' = Me; R = Me, R' = H; R = R' = H. i) 1.0 eq. nBuLi (THF) or 1.0 eq. tBuOK (THF); ii) 1,1 eq. R¹R²CO; iii) 1,0 eq. nBuLi (THF); 1,1 eq. R³R⁴CO; v) 2.0 eq nBuLi (THF) or 2.0 eq CH₃SOCH₂Li (DMSO); y) 1,0 eq RX (THF).

1) H. J. CRISTAU, *Chem. Rev.*, 94, 1299, (1994).

2) H. J. CRISTAU, J. GRENIER and E. TORREILLES, *Phosphorus, Sulfur and Silicon*, 89, 163, (1994).