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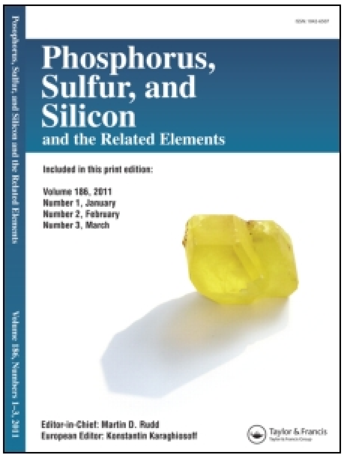

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Chiral δ-Hydroxyalkyl Wittig Reagents: Synthesis and Reactivity

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CHIRAL δ-HYDROXYALKYL WITTIG REAGENTS :SYNTHESIS AND REACTIVITY

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Abstracts:enantioselective reduction of ketophosphonium salts give chiral synthons used in WITTIG reactions to prepare opticaly active ethylenic alcohols.

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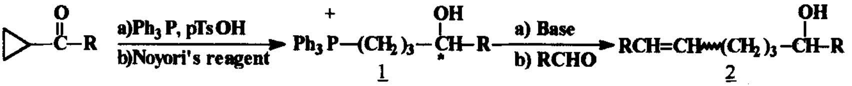
Chiral hydroxyalkyl phosphonium salts could be a convenient way to introduce an assymetric center in a given molecule via a Wittig reaction. For such reagents we choosed δ-functionalized phosphonium salts 1 for which we have developped a convenient way of access to the keto precursors [1]:



Yield: 80%

Yield: 75 %, Z/E=55/45, ee : 40% (R=Me)
Z/E=60/40, ee : 70% (R=Ph)

The enantioselective reduction of the keto phosphonium salts to the corresponding hydroxy chiral products were performed using NOYORI'S reagent, a chiral complex hydride prepared from $AlLiH_4$ and optically active β binaphtol [2] easily recovered after the work-up of the reaction. The salts 1 can be used in Wittig reactions with aliphatic and aromatic aldehydes leading to the corresponding ethylenic alcohols.2 The enantiomeric excess can be ascertained by chiral HPLC,and/or NMR spectroscopy (^1H and ^{31}P).depending on the compound.

1) - H.J. CRISTAU, Y. BEZIAT, C.E. NIANGORAN, H. CHRISTOL, Synthesis, 1987, 7, 648.
2) - R. NOYORI, I. TOMINO, N. NISHIZAWA, J. Am. Chem. Soc., 1984, 106, 6709.