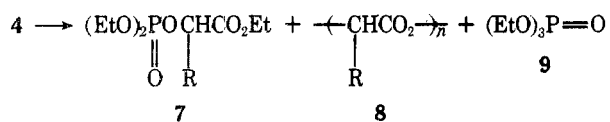


Table I. Reduction of α -Keto Acid to α -Hydroxy Acid by Phosphite

Reaction ^a	Yield, % of α -hydroxy acid	
	(EtO) ₃ P	EPP ^e
1a \rightarrow 2a ^b	94	99
1b \rightarrow 2b ^c		78
1c \rightarrow 2c ^b	67	59
1d \rightarrow 2d ^d	>90	60

^a α -Keto acid (5 mmol) and phosphite (5 mmol) in 3 mL of acetonitrile at room temperature for 12 h. ^b Isolated as zinc salt. ^c Isolated as calcium salt. ^d Isolated as free mandelic acid, mp 120.5 °C. ^e Ethylene phenyl phosphite.



Prior to the present study two methods for reduction of α -keto acids have been reported.^{1,2} Sodium borohydride reduction of 1a and 1d gave 2a and 2d in yields of 61 and 76%,

respectively,¹ whereas hydrogenation of 1a in the presence of Raney nickel afforded 2a in 56% yield.² The present results (Table I) provide a better method for selective reduction of α -keto acids to α -hydroxy acids.

References and Notes

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Takeo Saegusa,* Shiro Kobayashi
Yoshiharu Kimura, Tsunenori Yokoyama
Department of Synthetic Chemistry

Faculty of Engineering
Kyoto University, Kyoto, Japan

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