

Lactonization of unsaturated alcohols catalyzed by palladium complexes under neutral conditions.

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Abstract

Secondary and tertiary allylic alcs. react with carbon monoxide in the presence of catalytic amt. of bis(dibenzylideneacetone)palladium(0) and 1,4-bis(diphenylphosphino)butane affording lactones in 45-92% isolated yields. Thus, $H_2C:CHCRMeOH$ ($R = H, Me, Et, CMe_3, Ph$) gave 70-92% butyrolactones I. α,β -Unsatd. acids, e.g., $MeCR:CHCO_2H$ are formed by isomerization and carbonylation of primary allylic alcs. $H_2C:CRCH_2OH$. 2(5H)-Furanones, e.g., II ($R = Me, Et, Ph$) were isolated in yields of 60-80% when alkynols $HC\equiv CCRMeOH$ were employed as substrates for the cyclocarbonylation process.

