

Synthesis of unsaturated esters, including tert-alkyl esters, by the palladium-catalyzed carbonylation of alkynes in the presence of alcohols and 1,4-bis(diphenylphosphino)butane.

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Abstract

Treatment of alkynes, e.g., $\text{PhC}\equiv\text{CCH}_3$, with carbon monoxide and alcs., using catalytic amts. of $\text{Pd}(\text{dba})_2$ (dba = dibenzylideneacetone) or $\text{Pd}(\text{OAc})_2$ and 1,4-bis(diphenylphosphino)butane, affords unsatd. esters, e.g., $\text{PhC}(\text{CH}_2)\text{CO}_2\text{CMe}_3$. The regiochem. is opposite to that found using a formate ester instead of alc., and the process is applicable to tertiary esters.