

**Formic acid-palladium acetate-1,4-bis(diphenylphosphino)butane: an effective catalytic system for regioselective hydrocarboxylation of simple and functionalized olefins.**

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**Abstract**

Reaction of mono- and disubstituted olefins, e.g., PhCH:CH<sub>2</sub>, with formic acid, catalytic quantities of palladium acetate and 1,4-bis(diphenylphosphino)butane, in a carbon monoxide atm., affords carboxylic acids, e.g., PhCH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>H, in 45-98% yield. The reaction is regioselective and, in a no. of cases, regiospecific for the straight-chain acid. Functional groups such as trimethylsilyl, aldehyde, ketone, nitrile, acid and amide and trisubstituted olefins can be tolerated in this reaction.