

APPLICATION OF Pd(OCOCF₃)₂/BIPYRIDINE COMPLEX IN THE FORMATION OF QUATERNARY CARBON CENTERS

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Abstract

The benzylic quaternary center is a widely prevalent motif in a multitude of biologically active natural products, drug candidates, and fragrances. The challenge of installing these centers in a straightforward and selective manner continues to receive much attention in recent literature. Transition-metal catalysis offers a spectrum of reactions to address this challenge. In this respect, few reactions have enjoyed the success, tenability, and reliability of conjugate addition reactions to β,β-disubstituted enones. An efficient protocol for the formation of benzylic quaternary centers via arylation of enones using a catalyst made from Pd(O₂CCF₃)₂ and 2,2'-bipyridine is developed. For cyclic substrates, catalyst loadings as low as 1 mol % Pd are enough to afford excellent yields (>90 %) using a variety of arylboronic acids. In the case of acyclic substrates, the addition of K₂SbF₆ was found to improve conversions and yields.

Keywords: arylations, C - C coupling reactions, enones, ligands, palladium

Literature:

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