

A Pd-Free Sonogashira Coupling Protocol Employing an In-Situ-Prepared Copper/Chelating 1,2,3-Triazolylidene System

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The Sonogashira coupling reaction is a metal-catalyzed cross-coupling transformation widely used in organic synthesis to form Csp²-Csp bonds, through the coupling of aryl- or vinyl-halides with terminal alkynes, affording conjugated acetylenic compounds. It is widely used in the synthesis of pharmaceuticals and compounds with biological activity, non-linear optical materials and molecular electronics, polymeric and dendrimeric materials, macrocycles with acetylene links, as well as polyalkynylated molecules.

We herein report a palladium-free Sonogashira coupling reaction protocol using a catalytic system that comprises a simple, cheap, widely available copper salt and a chelating 1,2,3-triazolylidene ligand precursor. This protocol provides the desired coupling products in moderate to very good yields.

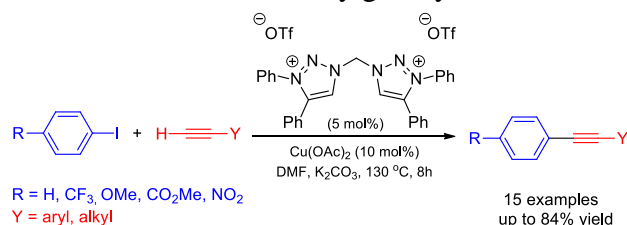


Figure 1: Sonogashira coupling reaction catalyzed by Cu(OAc)₂ and the chelating 1,2,3-triazolylidene ligand precursor.

References:

1. Tonis, Stein, Stamatopoulos, Stubbe, Zarkadoulas, Sarkar, Vougioukalakis, *Synlett*
2. Liori, Stamatopoulos, Papastavrou, Pinaka, Vougioukalakis, *Eur. J. Org. Chem.* **2018**, *44*, 6134-6139.

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