One-pot Sonogashira–Hydroarylation reaction catalyzed by anionic palladium complexes in an aqueous medium.

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It was found that anionic Pd(II) complexes of type $[CA]_2[PdCl_4]$ and $[CA]_2[Pd_2Cl_6]$ (CA = imidazolium or pyridinium cation) are effective catalysts for copper-free Sonogashira coupling in an aqueous medium without additional ligands or co-catalysts. Both types of substrates, containing electron donor or electron acceptor groups, formed the corresponding products in good to excellent yield. The most active complex, $[bmpy]_2[Pd_2Cl_6]$ (bmpy = 1-butyl-4-methylpyridinium cation), was employed to the hydroarylation of the Sonogashira product in a one-pot process, using microwave radiation, $NaBPh_4$ as a phenyl source and water as a proton donor. In these reactions the presence of electron donor substituents facilitated a higher conversion of diarylacetylenes to triarylethenes than electron acceptor groups.

Słowa kluczowe

Sonogashira reaction, Aqueous medium, Hydroarylation, One-pot reaction, Palladium, Triarylethene

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