Palladium(II) complexes comprising thiazole-hydrazone Schiff base ligand: Synthesis, structure and catalytic activity in Suzuki-Miyaura coupling reactions

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The reaction of PdCl2 and Pd(OAc)2 with (E)-2-(2-(pyridin-2-ylmethylene)hydrazinyl)benzo[d]thiazole (HL) in methanol resulted in the formation of two neutral mononuclear Pd(II) complexes. By using PdCl2 two kinds of crystals with general formula of [Pd(Cl)L]·0.5(C2H5OH) (1a) and [Pd(Cl)L] (1b) were obtained while Pd(OAc)2 gave one type of crystal with general formula of [Pd(OAc)L]·0.5(H2O) (2). These complexes were characterized using spectroscopic methods, and their molecular structures were determined by single crystal X-ray diffraction analysis. In these complexes, the ligand coordinates to the Pd(II) core through the nitrogen atoms of the thiazole ring, pyridine ring, and imine moiety, acting as tridentate mononegative NNN donor ligand. These palladium(II) complexes were also found to exhibit catalytic activity in Suzuki-Miyaura coupling reactions.

Słowa kluczowe

Thiazole-hydrazone, Palladium, Suzuki-Miyaura, C–C bond formation

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