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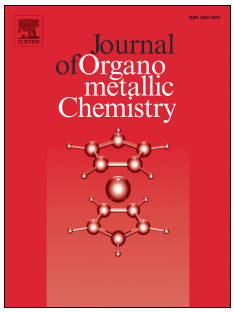

Synthesis and structural characterization of ferrocene phosphines modified with polar pendants and their palladium(II) complexes. Part II: *N*-aminocarbonyl and *N*-acyl phosphinoferrocene carbohydrazides

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Synthesis and structural characterization of ferrocene phosphines modified with polar pendants and their palladium(II) complexes. Part II: *N*-aminocarbonyl and *N*-acyl phosphinoferrocene carbohydrazides

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Abstract. The reactions of 1'-(diphenylphosphino)-1-(hydrazinylcarbonyl)ferrocene, $Ph_2PfcCONHNH_2$ (**1**; fc = ferrocene-1,1'-diyl), with HNCO, EtNCO, PhNCO, $Me_2NC(O)Cl$/pyridine, and Ac_2O/NEt_3 produced the corresponding *N*-functionalized derivatives $Ph_2PfcCONHNHC(O)Y$ (**1a-e**), where Y = NH_2 (**a**), NHEt (**b**), NHPh (**c**), NMe_2 (**d**), and Me (**e**). Compounds **1a-e** were used as ligands (L) to prepare Pd(II) bis(phosphine) complexes $[PdCl_2(L\text{-}\kappa P)_2]$ (**3a-e**) and two series of Pd(II) complexes bearing an auxiliary 2-[(dimethylamino-κ*N*)methyl]phenyl-κC^1 (L^{NC}) ligand, namely, $[(L^{NC})PdCl(L\text{-}\kappa P)]$ (**4a-e**) and $[(L^{NC})Pd(L\text{-}\kappa^2 O,P)][SbF_6]$ (**5a-e**). The crystal structures of compounds **1a**, **1c**, **1e**, the phosphine oxide of **1e** (i.e., compound **2e**), and complexes **3c**·$4CH_2Cl_2$·$2CH_3OH$, **3e**·$4CH_3OH$, **4e**, and **5e**·$2.5CHCl_3$ were determined by single-crystal X-ray diffraction analysis. Hydrogen bonding interactions observed in the solid-state structures of these compounds are discussed.

Keywords: Ferrocene ligands; Phosphines; Hydrazides; Ureas; Palladium complexes; Structure elucidation.