

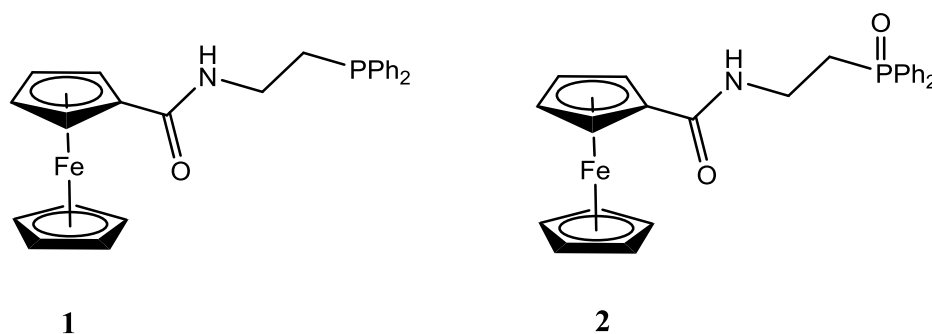
Title: Synthesis and characterization of ferrocenylated amidophosphine.

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Abstract: Complexes with amidophosphine donors have found interesting applications in catalysis and in medicinal chemistry. This led us to synthesize {[2-(diphenylphosphino)ethyl]-amino]carbonyl}ferrocene (compound **1**) and the corresponding phosphine oxide (compound **2**).



This work describes three new synthetic routes to the target amidophosphine **1**. The first one is a simple reaction of ferrocenecarboxylic acid with 2-(diphenylphosphino)ethylamine with reagents mediating amide bond formation. The second approach is based on the reaction of the mentioned amine with the respective acylbenzotriazole. Finally, the third way makes use of the reaction between the amine and an active ester, pentafluorophenyl ferrocenecarboxylate. All products and intermediates were characterized by NMR spectra. The newly prepared phosphine oxide **2** was further characterized by infrared spectroscopy, elemental analysis, mass spectrometry and its crystal structure was determined by single-crystal X-ray crystallography.

Keywords: ferrocene ligands, ferrocene, phosphine, amide, phosphineoxide, synthesis.