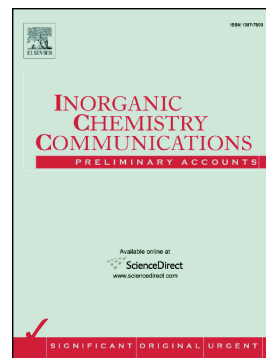


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Gold(I) phosphine complexes with bis(2-pyridyl)diselenoether: synthesis and structure elucidation

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Abstract

Bis(2-pyridyl)diselenoether with the general formula (2-PySe)₂(CH₂) (**L**) reacts with Ph₃PAuCl and [(dpph)(AuCl)₂] dpph = 1,6-bis(diphenylphosphino)hexane to produce the respective complexes [(**L**)Au₂(PPh₃)₂](PF₆)₂ (**1**) and [(**L**)(dpph)Au₂(PF₆)₂]_n (**2**). These complexes were isolated in crystalline form and studied using spectroscopic and X-ray diffraction techniques. The coordination of the ligand (2-PySe)₂(CH₂) (**L**) to the gold(I) metal centers in complexes [(**L**)Au₂(PPh₃)₂](PF₆)₂ (**1**) and [(**L**)(dpph)Au₂(PF₆)₂]_n (**2**) occurs via the nitrogen atom of the pyridine ring, with no interaction with the selenium atoms of the bis(2-pyridyl)diselenoether. The gold derivative (Ph₃PAuCl or [(dpph)(AuCl)₂]) is responsible for the formation of a molecular complex (**1**) or a polymeric complex (**2**), and in both compounds the gold(I) metal atoms adopt an almost linear geometry.

Keywords: Selenium, Bis(2-pyridyl)diselenoether, Gold, Complex, X-ray structure.

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