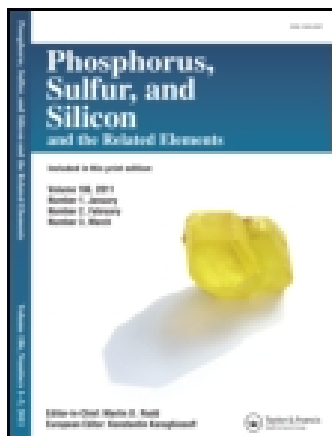


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New Chiral Ligands and Complexes from α -Amino Acids

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N-diphenylphosphinoamino methyl/ethyl esters, dppam, react with $[\text{PtCl}_2(\text{cod})]$ and $[\text{RhCl}(\text{cod})]_2$ to give *cis*- $[\text{PtCl}_2(\text{dppam-P})_2]$ and $[\text{RhCl}(\text{cod})(\text{dppam-P})]$, while interaction of dppam with $[\text{PdCl}_2(\text{cod})]$ leads to different complexes.

Keywords: N-diphenylphosphinoamino esters; $[\text{PtCl}_2(\text{cod})]$; $[\text{RhCl}(\text{cod})]_2$; $[\text{PdCl}_2(\text{cod})]$

INTRODUCTION

Chiral Complexes are very important in catalytic asymmetric synthesis. As natural and readily available chiral compounds, amino acids are often employed as starting material for chiral ligands.¹⁻⁴ There are several reports⁵⁻⁷ which involve N,N-bis(diphenylphosphino)amino esters, but no N-mono(diphenylphosphino)amino ester complexes are found except one report about the stereoselective synthesis of the N-phosphorus(V) substituted amino acids via the N-phosphorus(III) derivative of amino acids.⁸ Here we present some new N-diphenylphosphinoamino esters and the corresponding chiral complexes of these ligands.

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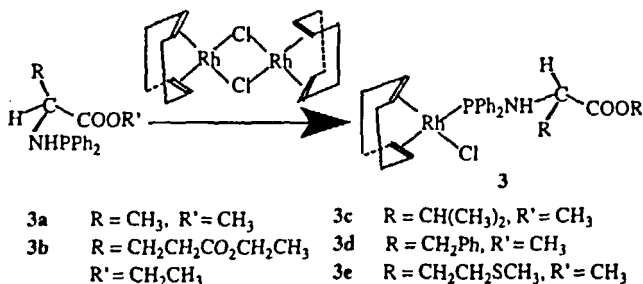


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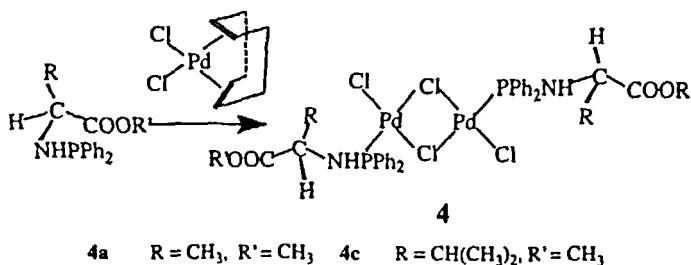


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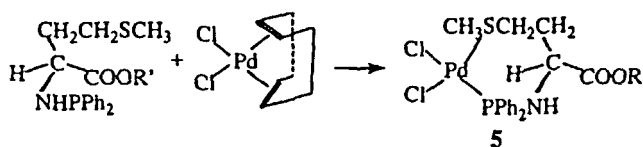


SCHEME 3

It is surprising that **1** and [PdCl₂(cod)] lead to different products. As shown by SCHEME 4, **1a** and **1c** coordinate with [PdCl₂(cod)] to give the surprising chloro-bridged binuclear complexes **4**. But **1e** and [PdCl₂(cod)] gave a chelate hemilabile complex *cis*-[PdCl₂(dppme-*P,S*)] **5** (SCHEME 5). Other ligands react with [PdCl₂(cod)] to result in rather complicated mixtures which are difficult to separate.



SCHEME 4



SCHEME 5

Complexes **2a**, **4a**, and **5** have been confirmed by X-ray crystallographic analysis.

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