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**To cite this Article** Zhang, Qingzhi , Slawin, Alexandra M. Z. and Woollins, J. Derek(2001) 'New Chiral Ligands and Complexes from  $\alpha$ -Amino Acids', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 169: 1, 215 — 218

**To link to this Article:** DOI: 10.1080/10426500108546627

**URL:** <http://dx.doi.org/10.1080/10426500108546627>

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## New Chiral Ligands and Complexes from $\alpha$ -Amino Acids

QINGZHI ZHANG, ALEXANDRA M. Z. SLAWIN  
and J. DEREK WOOLLINS

*Department of Chemistry, University of St Andrews, Fife, Scotland KY16 9ST*

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.

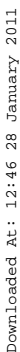
**Keywords:** N-diphenylphosphinoamino esters;  $[\text{PtCl}_2(\text{cod})]$ ;  $[\text{RhCl}(\text{cod})]_2$ ;  $[\text{PdCl}_2(\text{cod})]$

### 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.<sup>1-4</sup> There are several reports<sup>5-7</sup> 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.<sup>8</sup> Here we present some new N-diphenylphosphinoamino esters and the corresponding chiral complexes of these ligands.

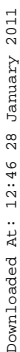
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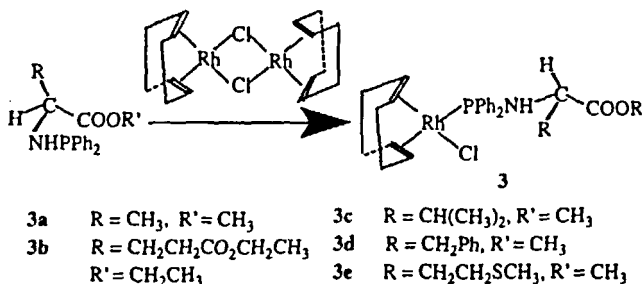


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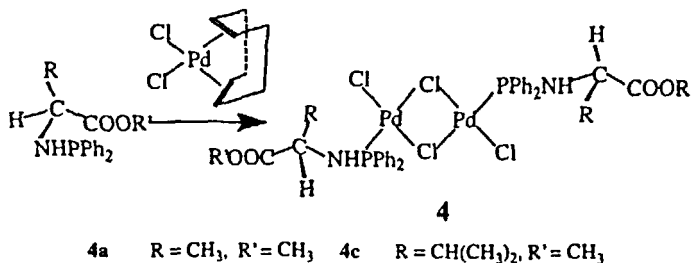


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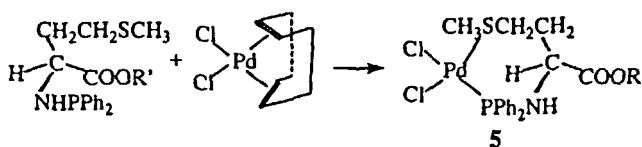


SCHEME 3

It is surprising that **1** and [PdCl<sub>2</sub>(cod)] lead to different products. As shown by SCHEME 4, **1a** and **1c** coordinate with [PdCl<sub>2</sub>(cod)] to give the surprising chloro-bridged binuclear complexes **4**. But **1e** and [PdCl<sub>2</sub>(cod)] gave a chelate hemilabile complex *cis*-[PdCl<sub>2</sub>(dppme-*P,S*)] **5** (SCHEME 5). Other ligands react with [PdCl<sub>2</sub>(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.

### ACKNOWLEDGEMENTS

We wish to thank Johnson Matthey plc for loan of precious metals. Qingzhi Zhang is indebted to St Andrews University and Prof. J. D. Woollins as well as the Chinese Scholarship Council for financial support.

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