Accepted Manuscript

Dinuclear Pd^{II}/Pt^{II} complexes $[M_2(phosphine)_n(thio-ligand)_3]Cl$ incorporating N, S-bridged pyridine-2-thiolate and benzimidazoline-2-thiolate

Tarlok S. Lobana, Amanpreet K. Sandhu, Rakesh K. Mahajan, Geeta Hundal, Sushil K. Gupta, Ray J. Butcher, Alfonso Castineiras

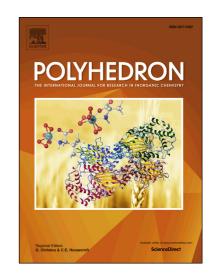
PII: S0277-5387(17)30079-7

DOI: http://dx.doi.org/10.1016/j.poly.2017.01.042

Reference: POLY 12446

To appear in: Polyhedron

Received Date: 2 December 2016 Revised Date: 25 January 2017 Accepted Date: 25 January 2017



Please cite this article as: T.S. Lobana, A.K. Sandhu, R.K. Mahajan, G. Hundal, S.K. Gupta, R.J. Butcher, A. Castineiras, Dinuclear Pd^{II}/Pt^{II} complexes $[M_2(phosphine)_n(thio-ligand)_3]Cl$ incorporating N, S-bridged pyridine-2-thiolate and benzimidazoline-2-thiolate, *Polyhedron* (2017), doi: http://dx.doi.org/10.1016/j.poly.2017.01.042

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Dinuclear Pd^{II}/Pt^{II} complexes $[M_2(phosphine)_n(thio-ligand)_3]Cl$ incorporating N, S-bridged pyridine-2-thiolate and benzimidazoline-2-thiolate

Tarlok S. Lobana,*a Amanpreet K. Sandhu, Rakesh K. Mahajan, Geeta Hundal, Sushil K. Gupta, Ray J. Butcher, Alfonso Castineiras

^aDepartment of Chemistry, Guru Nanak Dev University, Amritsar-143 005, India

^bDepartment of Chemistry, Howard University, 525 College Street NW, Washington, DC 20059, USA

^cDepartamento de Quimica Inorganica, Facultad de Farmacia, Universidad de Santiago, Santiago/Spain.

Email: tarlokslobana@yahoo.co.in;

Fax: 91-183-2258820; Telephone: 91-183-2258802 ext. 3195

ABSTRACT

Equimolar reaction of [PdCl₂(dppm)] {dppm = bis(diphenylphosphino) methane} with pyridine-2-thione (pySH) in presence of NaOH base in aqueous ethanol formed dinuclear mixed- ligand complex, [Pd^{II}₂(μ-κ²:N,S-pyS)₃(μ-P,P-dppm)]Cl **1**. Similarly, reaction of PdCl₂(PPh₃)₂ with benzimidazoline-2-thione (bzimSH) in 1 : 2 molar ratio in the presence of Et₃N base in acetonitrile has formed a dinuclear complex, [Pd^{II}₂(μ-κ²:N,S-bzimS)₂(κ¹-S-bzimS)(PPh₃)₃]Cl·2H₂O **2.** Surprisingly, analogous thio-ligand, 1,3-imidazoline-2-thione (imzSH), merely formed a simple square planar complex, [Pd(κ¹-S-imzSH)₄]Cl₂·2H₂O **3**. The reaction of H₂PtCl₆ with pySH and dppm (1:1:1 molar ratio) in the presence of Et₃N base in toluene –ethanol (1:1:: v/v) mixture also formed a mixed-ligand dinuclear complex [Pt^{II}₂(μ-κ²:N,S-pyS)₃(μ-P,P-dppm)]Cl similar to **1.** All these complexes have been characterized using analytical data, IR, NMR (¹H, ³¹P), UV-visible, fluorescence, ESI-mass and single crystal x-ray crystallographic techniques. The anionic thio-ligands are N,S-bridged in complexes **1** and **4**, both N,S-bridged and κ¹-S bonded in **2** and as neutral κ¹-S bonded in **3**. There are short M···M contacts in **1** and **4** (1: 2.7249(5) Å; **4:** 2.7350(8) Å). Complexes **1**, **3** and **4** showed intense fluorescence. ESI mass spectral studies of **1**, **3** and **4** revealed the formation of molecular ions and other species.

Download English Version:

https://daneshyari.com/en/article/5154502

Download Persian Version:

https://daneshyari.com/article/5154502

<u>Daneshyari.com</u>