

## Accepted Manuscript

Palladium(II) complexes with thioether containing azophenol ligands: synthesis, characterization, X-ray structure and DNA binding study

Subrata Jana, Ajoy Kumar Pramanik, Chandan Kumar Manna, Tapan Kumar Mondal

PII: S0277-5387(18)30244-4  
DOI: <https://doi.org/10.1016/j.poly.2018.04.044>  
Reference: POLY 13153

To appear in: *Polyhedron*

Received Date: 15 January 2018

Accepted Date: 29 April 2018

Please cite this article as: S. Jana, A.K. Pramanik, C.K. Manna, T.K. Mondal, Palladium(II) complexes with thioether containing azophenol ligands: synthesis, characterization, X-ray structure and DNA binding study, *Polyhedron* (2018), doi: <https://doi.org/10.1016/j.poly.2018.04.044>



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.

**Palladium(II) complexes with thioether containing azophenol ligands: synthesis, characterization, X-ray structure and DNA binding study**

**Subrata Jana, Ajoy Kumar Pramanik, Chandan Kumar Manna and Tapan Kumar Mondal\***

Inorganic Chemistry Section, Department of Chemistry, Jadavpur University, Kolkata – 700032, India.

---

**Abstract**

The new palladium(II) complexes  $[Pd(L^1/L^2)Cl]$  (**1/2**), with ONS donor azo–thioether ligands ( $HL^1/HL^2$ ), have been successfully synthesized. The complexes were thoroughly characterized by several spectroscopic techniques. The distorted square planar geometries of the complexes were confirmed by single crystal X-ray analysis. The electronic structures, redox and spectral properties are interpreted by DFT and TDDFT calculations. The interaction of the complexes with CT DNA was investigated by the UV-vis method and the binding constant was found to be  $3.56 \times 10^4 M^{-1}$  for **1** and  $5.72 \times 10^4 M^{-1}$  for **2**. A competitive binding titration with ethidium bromide (EB) by the fluorescence titration method revealed that the complexes efficiently displace EB from the EB-DNA system and the Stern-Volmer dynamic quenching constant,  $K_{sv}$ , was found to be  $1.28 \times 10^4 M^{-1}$  and  $2.04 \times 10^4 M^{-1}$  for **1** and **2** respectively.

*Keywords:* Palladium(II) complex; ONS donor azo–thioether ligand; X–ray structure; Electrochemistry; DNA binding; DFT computation.

---

Corresponding author e-mail: [tapank.mondal@jadavpuruniversity.in](mailto:tapank.mondal@jadavpuruniversity.in)

Download English Version:

<https://daneshyari.com/en/article/7762539>

Download Persian Version:

<https://daneshyari.com/article/7762539>

[Daneshyari.com](https://daneshyari.com)