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### Acceptance Letter

08 October 2017

Dear Author (s)

Dr./Mr. Khalid J .AL-Adilee / University of Al-Qadisiyah, Iraq

Dr./Mr. Haitham K. Dakheel / University of Al-Qadisiyah, Iraq

### Greetings

We would like to inform you that, your following paper was accepted and is selected for publication in: Vol. 9-10, No. (12-01), Upcoming Regular issues, and 2017-2018 of Journal of Global Pharma Technology /, (to get released on 11-19 January 2018).

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Paper number **JGPTV(9-10) ALK10 B** = Synthesis, Spectral and Biological Studies of Ni(II), Pd(II), and Pt(IV) Complexes with New Heterocyclic ligand Derived from Azo-Schiff Bases dye

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# Synthesis, Spectral Characterization and Biological Studies of New Heterocyclic Azo-Schiff Bases Compound (E)-5-((E)-(1H-benzo[d]imidazol-2-yl) diazenyl)- N- (4-(dimethylamino) benzylidene)-4,6-dimethylpyridin-2-amine with some Metal Ions Selective

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## **Abstract**

New heterocyclic Azo-Schiff base dyes with the different substitution have been designed from a reaction of 4-(dimethylamino)benzaldehyde with (E)-5-((1H-benzo[d]imidazol-2-yl) diazenyl)-4,6-dimethylpyridin-2-amine. A new class of Ni(II), Pd(II), and Pt(IV) complexes of azo-containing Schiff base of the type  $[\text{Ni}(\text{L}_2)_2\text{Cl}_2]$ ,  $[\text{Pd}(\text{L}_2)\text{Cl}_2]$ , and  $[\text{Pt}(\text{L}_2)_2\text{Cl}_2]\text{Cl}_2$  where  $\text{L}_2 = (\text{E})\text{-5-}((\text{E})\text{-}(1\text{H-benzo[d]imidazol-2-yl)diaz-enyl})\text{-N-(4-(dimethylamino)benzylidene) 4,6-dimethylpyridin-2-amine}$ . Both ligand and its transition metal complexes were characterized by the spectroscopic and analytical methods such as mass spectral, elemental analysis, molar conductance measurements and magnetic susceptibility.  $^1\text{H-NMR}$ , FT-IR, UV-Vis., X-ray, TGA and SEM, spectral studies suggest the mole ratio  $[\text{M}:\text{L}]$  was  $[1:2]$  for Ni(II) and Pt(IV) metal ions, and  $[1:1]$  for Pd(II) metal ion. The structures of these complexes were elucidated on the basis of different techniques suggest the structures of the prepared metal complexes octahedral geometry for the Ni(II) and Pt(IV) complexes and square planar geometry for the Pd(II) complex. The antibacterial activity of the prepared complexes was also studied against gram positive and gram negative bacteria. It is found that some of the complexes are quite effective against tested bacteria. In this study the cytotoxicity of Pd(II)-complex on human (PC3) cancer and normal cells were studied using MTT assay. Pd(II)-complex showed selective cytotoxicity against cancer cell line with  $\text{IC}_{50} = 450 \mu\text{g/ml}$ , while it was very safe on normal cells line with  $\text{IC}_{50} = 14554885 \mu\text{g/ml}$ , respectively for human cells. The results indicate undoubtedly the possibility of using them as antitumor drugs in the field of medicine and Pharmacy against prostate cancer.

**Key words** :- Synthesis, Azo-schiff base, Metal Complexes, X-ray diffraction, TGA and SEM, spectral studies, Biological activity, antitumor drugs.