CO-ORGANIZED EVENT
International Conference on
Toxicology and Clinical Pharmacology
&
2nd International Conference on
Generic Drugs and Biosimilars
December 14-16, 2017 Rome, Italy

Kadriye Benkli, Clin Exp Pharmacol 2017, 7:6(Suppl)
DOI: 10.4172/2161-1459-C1-025

Synthesis of Au(III) and Pt(II) complexes of Fosfomycin

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Developments in the design of metal-based therapeutic agents, which have a crucial role in cancer treatment, are key initiatives to develop new compounds with less toxic effects. At this point, scientists are working on the design of new metal complexes with different structural properties. Besides, studies on the acquisition of new metal complexes of known drug active substances and investigation of their activities of are being carried out. The use of Fosfomycin in the treatment of multidrug-resistant bacterial infections and in the treatment of pediatric cancer patients. The continued chemotherapeutic application of cisplatin [cis-diamminedichloroplatinum [II]) necessitates reduction of its dose-limiting toxicity without decreasing its tumoricidal effect. Fosfomycin is considered a potential antidote for the dose-limiting ototoxicity and nephrotoxicity of cisplatin chemotherapy. In this research, Pt (II) and Au (III) complexes of the Fosfomycin have been synthesized. The characterization of the intermediate and final compounds arising from this work was carried out by means of a variety of spectroscopic methods, which include 1H NMR, IR, MS, and elemental analysis.

Recent Publications

1. Mansour A M (2016) Spectroscopic, DFT, magnetic and biological activity evaluation of Pd(II), Pt(II) and Ru(III) complexes of Nitazoxanide, Inorganica Chimica Acta. 453: 697-703.
2. Al-Khodir F A I and Refat M S (2016) Synthesis, spectroscopic, thermal and anticancer studies of metalantibiotic chelations: Ca(II), Fe(III), Pd(II) and Au(III) chloramphenicol complexes. Journal of Molecular Structure. 1119, 157-166.
3. 3. Li Y S, Peng B, Ma L. et al (2017) Synthesis, crystal structures and antitumor activity of two platinum(II) complexes with methyl hydrazinecarbodithioate derivatives of indolin-2-one, Eur J Med Chem., 15 (127): 137-146.
4. Al-Khodir F A I and Refat M S (2015) "Spectroscopic Elaboration and Structural Characterizations of New Fe(III), Pd(II), and Au(III) Ampicillin Complexes: Metal-Antibiotic Ligational Behaviors", A J Pharm Innov. 10: 335-347.
5. Medici S, Peana M, Nurchi V M, Lachowicz J I, Crisponi G and Zoroddua M A (2015) Noble metals in medicine: Latest advances, Coordination Chemistry Reviews. 284: 329-350.

Biography

Kadriye Benkli has completed his PhD from Anadolu University Institute of Health Sciences, Turkey and postdoctoral studies from Leiden University, The Netherlands. He wss the Dean of Inonu University Pharmacy Faculty, and now Proffesor at Bezmialem University, Pharmacy Faculty, Pharmaceutical Chemistry Department. He has published more than 40 papers in reputed journals and has been serving as an editorial board member of repute.

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