

Evaluation biological of new coordination compounds based on diimine ligands against bacteria and fungi.

Camila dos Santos Chagas¹, Fernando L. A. Fonseca^{1,2}, Izilda A. Bagatin¹.

¹*Instituto de Ciências Ambientais, Químicas e Farmacêuticas –*

Universidade Federal de São Paulo, Diadema, SP, Brazil

Laboratório de Química de Calixarenos, Espectroscopia Molecular e Catálise-LQCEMC

²*Faculdade de Medicina do ABC, Santo André, SP, Brazil*

*e-mail: camila.s.chagas@hotmail.com

In our work we performed the synthesis and characterization of new coordination compounds with Al^{3+} , Zn^{2+} , Cu^{2+} and Ru^{2+} based on 2'2-bipyridine, 5-nitro-8-hydroxyquinoline and 5-chloro-8-hydroxyquinoline ligands. Important studies about quinolines have presented antibacterial activity against some Gram-positive and Gram-negative bacteria, and also against to certain fungi such as *Candida albicans*^{1,2}, stimulating our interest in those molecules. Therefore, ¹H-NMR and IR studies were made to characterize the structures and the complexes. After that, we performed the cytotoxicity assay for evaluation of possible changes in hematopoietic tissue, besides the analysis of hepatotoxicity and nephrotoxicity, according to International Standard Organization, ISO 10993. For this experiment the compounds were used in concentrations of 10^{-4} , 10^{-5} , 10^{-6} and 10^{-7} mol dm⁻³ dissolved in DMSO. Then, all compounds showed low toxicity in general. For the evaluation of antimicrobial activity, the test was conducted to Minimal Inhibitory Concentration, being observed effective action on all bacteria and fungi for all complexes.

FAPESP

1. Zhimin, F. Z.; *Bioresource Technol.* **2015**, 197, 113–119.
2. Shikiha, S. D.; Anjali, M. R.; *Arab. J. Sci. Chem.* **2011**.
3. Sturion, D. J.; Pinheiro, E. R.; Pardo, E.; Tanaka, N. M.; *Ciênc. Biol. Saúde* **1999**, 1, 141-47.