RCSI Bahrain

RSS PROJECT SUMMARY YEAR 2017

RCSI DEVELOPING HEALTHCARE LEADERS WHO MAKE A DIFFERENCE WORLDWIDE

Project Title	Antibacterial properties of a series of metal complexes of amino acids and 8-hydroxyquinoline

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Project Summary
The ever increasing prevalence of antimicrobial resistance strains of pathogenic microorganism poses a significant burden on healthcare resources and additional risks for patients receiving treatment in healthcare environments. Research is now looking into new ways to treat microbial infections. In recent years quinolone drugs have been shown to have increased antimicrobial activity when complexed to various metal ions. This research project proposes to investigate the antimicrobial activity of metal complexes of amino acids and 8-hydroxyquinoline. The research question What is the antimicrobial effect of metal complexes of amino acids and 8-hydroxyquinoline against bacterial and fungal cells of medical importance? The aims of the study • To examine the effect of metal complexes of amino acids and 8-hydroxyquinoline on the growth of pathogenic bacteria and opportunistic fungi. The objectives of the study • To identify a solvent for metal complexes of amino acids and 8-hydroxyquinoline suitable for antimicrobial analysis • To measure zones of inhibition when bacterial and fungal cells are exposed to metal complexes of amino acids and 8-hydroxyquinoline

Subjected to Ethics Approval	**Yes:** □ **No:** ⊟

Primary References	1. Shivankar, V. S., R. B. Vaidya, et al. (2003). "Synthesis, Characterization, and Biological Activity of Mixed Ligand Co(II) Complexes of 8-Hydroxyquinoline and Some Amino Acids." Synthesis and Reactivity in Inorganic and Metal-Organic Chemistry **33**(9): 1597 – 1622. 2. Hanna, W. G. and M. M. Moawad (2002). "Structural and Microbial Studies of some Transition Metal Complexes of 7-Substituted-8-Hydroxyquinoline-5-Sulphonic Acid Ligands." Journal of Coordination Chemistry **55**(1): 43 – 60. 3. Patel, D. K., A. Singh. (2009). "Synthesis, Characterization and Antimicrobial Activity of Metal Chelates of 5- 4-Chloro phenyl(1, 3, 4)thiadiazol-2-ylamino methylene -8-hydroxyquinoline.", European Journal of Chemistry **6**(4): 1017 – 1022.