

Synthesis, Identification, and Biological Activity as Antibacterial of Transitional Bivalent Metal Complexes Derived from A new (azo-Schiff) Base Ligand

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SUMMARY. Novel the ligand azo-Schiff base 5-((1E)-(4-(1-(pyridine-4-ylimino) ethyl) phenyl) diazenyl) quinoline-8-ol has been synthesized from coupling (E)-1-(4-((8-hydroxyquinoline-5-yl) diazenyl) phenyl) ethan-1-one with 3-Aminopyridine. The compositions of novel ligand (AHQPAP) and some bivalent ion complexes (Co, Ni, Cu, Zn, Cd, and Hg(II)) were confirmed and diagnosed by elemental analysis, (FT-IR, ¹H, UV-Vis, and mass spectrum), Molar conductance, and magnetic susceptibility measurement. [M(L)2(H₂O)₂] is the general formula where M represents the divalent metals selected with mole ratio 2:1 as (ligand to metal). The results of this work have suggested an octahedral geometry. The biological study of AHQPAP and mineral complexes was investigated against various bacteria such as *P. aeruginosa*, which behaves as Gram -, and *S. aureus*, which acts as Gram +, with DMSO as the solvent. The results show all compounds were found highest actives against various bacteria compared to the ligand.

RESUMEN. El nuevo ligando azo-base de Schiff 5-((1E)-(4-(1-(piridin-4-ilimino) etil) fenil) diazenil) quinolina-8-ol se ha sintetizado a partir del acoplamiento (E)-1-(4-((8-hidroxiquinolina-5-il) diazenil) fenil) etano-1-ona con (3-aminopiridina). Las composiciones del nuevo ligando (AHQPAP) y algunos complejos de iones bivalentes (Co, Ni, Cu, Zn, Cd y Hg(II)) se confirmaron y diagnosticaron mediante análisis elemental (FT-IR, ¹H, UV-Vis y espectro de masas), conductancia molar y medición de la susceptibilidad magnética. [M(L)2(H₂O)₂] es la fórmula general donde M representa los metales divalentes seleccionados con una relación molar 2:1 como (ligando a metal). Los resultados de este trabajo han sugerido una geometría octaédrica. Se investigó el estudio biológico de AHQPAP y complejos minerales frente a diversas bacterias como *P. aeruginosa*, que se comporta como Gram- y *S. aureus*, que actúa como Gram+, con DMSO como disolvente. Los resultados muestran que todos los compuestos se encontraron con los activos más altos contra varias bacterias en comparación con el ligando.

KEY WORDS: AHQPAP, complexes, 8-hydroxyquinoline, novel ligand.

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