

A New Mixed-ligand Co(II) Coordination Polymer: Treatment and Nursing Application on Delirium After Prostate Surgery

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SUMMARY. A three-dimensional rigid Co(II) coordination polymer with the chemical composition of $\{[\text{Co}(\text{bpdado})(\text{bpe})(\text{H}_2\text{O})_2] \cdot 2\text{DMF} \cdot 2\text{H}_2\text{O}\}_n$ (**1**) has been synthesized by $\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ with the 2'-bipyridine-3, chiral N-Oxide-functionalized 2,3'-dicarboxylate-1,1'-dioxide (H_2bpdado) ligand with accessory rigid linear *trans*-1,2-bis (4-pyridyl)ethene (bpe) connector in a mixed solution of DMF and water. Its application value on delirium after prostate surgery was explored and the specific principle was studied in the meantime. The results from molecular docking simulation suggested from a molecular level that the Co complex could construct multifarious connecting interactions with the receptor; these binding interactions were from the carboxyl and hydroxy groups, indicating excellent biological activity.

RESUMEN. Un polímero de coordinación de Co(II) rígido tridimensional con la composición química de $\{[\text{Co}(\text{bpdado})(\text{bpe})(\text{H}_2\text{O})_2] \cdot 2\text{DMF} \cdot 2\text{H}_2\text{O}\}_n$ (**1**) ha sido sintetizado por $\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ con el ligando 2'-bipiridina-3, quiral N-óxido funcionalizado 2,3'-dicarboxilato-1,1'-dióxido (H_2bpdado) con *trans*-1,2-bis (4-piridil)eteno lineal rígido accesorio (bpe) conector en una solución mixta de DMF y agua. Se exploró su valor de aplicación en el delirio después de la cirugía de próstata y mientras tanto se estudió el principio específico. Los resultados de la simulación de acoplamiento molecular sugirieron desde un nivel molecular que el complejo de Co podría construir múltiples interacciones de conexión con el receptor; estas interacciones de unión eran de los grupos carboxilo e hidroxilo, lo que indica una excelente actividad biológica.

KEYWORDS: coordination complex, delirium, molecular docking, prostate surgery.

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