



Important Application Value of a New Co(II) Coordination Polymer in the Prevention and Control of Infections in Operating Rooms

Li LIU*, Yun-Xia CAI, Shui-Hua GUO, Hai-Xia LAN & Shuo ZHANG

*Operating room, Ganzhou People's Hospital,
Ganzhou, Jiangxi, China*

SUMMARY. In the present experiment, by utilizing the rigid tricarboxylic acid ligand, the fresh Co(II)-based coordination polymer with the chemical composition of $\{[Co_3(L)_2(H_2O)_4](H_2O)_2\}_n$ (**1**) has been favorably obtained via mixing of $Co(NO_3)_2 \cdot 6H_2O$ with the H_3L ligand in the mixed solution of DMF and water. Its application value in the prevention and control of infections in operating rooms was discussed as well as the principle of immanence was probed in the meantime. Molecular docking simulation has confirmed the underlying interaction mechanism which between the receptor protein and the Co complex is originated from the formation of hydrogen bonding interactions by the multiple carboxyl groups.

RESUMEN. En el presente experimento, al utilizar el ligando de ácido tricarbóxico rígido, el polímero de coordinación fresco basado en Co(II) con la composición química de $\{[Co_3(L)_2(H_2O)_4](H_2O)_2\}_n$ (**1**) tiene se ha obtenido favorablemente mediante la mezcla de $Co(NO_3)_2 \cdot 6H_2O$ con el ligando H_3L en la solución mixta de DMF y agua. Se discutió su valor de aplicación en la prevención y control de infecciones en quirófanos y se probó el principio de immanencia. La simulación de acoplamiento molecular ha confirmado el mecanismo de interacción subyacente que se origina entre la proteína receptora y el complejo Co a partir de la formación de interacciones de enlaces de hidrógeno por los múltiples grupos carboxilo.

KEY WORDS: coordination polymer, infections, molecular docking

* Author to whom correspondence should be addressed. *E-mail:* liuli1983521@163.com