

Synthesis and Biological Activity of Two New Coordination Polymers as Antitumor Agents on Human Osteogenic Sarcoma Cells

Bin LI¹, Xi-Liang GUAN², Bin WANG³, Ru-Bin JIANG³, Ying-Zhen WANG^{1*}

¹ Department of Joint Surgery, The Affiliated Hospital of Qingdao University, Qingdao, Shandong, China

² Department of Orthopaedics, People's Hospital of Rizhao, Rizhao, Shandong, China

³ Department of Orthopaedics, Jining No.2 People's Hospital, Jining, Shandong, China

SUMMARY. Two new coordination polymers, namely $[\text{Co}(\text{H}_2\text{PO}_4)_2(\text{Tz})_2]_n$ (**1**, HTz = 1,2,4-triazole) and $[\text{Mn}(\text{H}_2\text{O})_2(\text{DMCA})]_n$ (**2**, H₂DMCA = 4,6-dihydroxypyrimidine-2-carboxylic Acid) have been successfully synthesized and characterized under solvothermal conditions. The structures of the two complexes have been successfully determined by single crystal X-ray diffraction. In addition, *in vitro* antitumor activity of compounds **1** and **2** on four human osteogenic sarcoma cell lines (MG63, U2OS, 143B and Saos2) was further determined and the results show that the two compounds showed promising activity.

RESUMEN. Dos nuevos polímeros de coordinación, a saber $[\text{Co}(\text{H}_2\text{PO}_4)_2(\text{Tz})_2]_n$ (**1**, HTz = 1,2,4-triazol) y $[\text{Mn}(\text{H}_2\text{O})_2(\text{DMCA})]_n$ (**2**, H₂DMCA = 4, ácido 6-dihidroxipirimidin-2-carboxílico) se han sintetizado y caracterizado con éxito en condiciones solvotermales. Las estructuras de los dos complejos se han determinado con éxito mediante difracción de rayos X de cristal único. Además, se determinó además la actividad antitumoral *in vitro* de los compuestos **1** y **2** en cuatro líneas celulares de sarcoma osteogénico humano (MG63, U2OS, 143B y Saos2) y los resultados muestran que los dos compuestos poseen actividad prometedora.

KEY WORDS: coordination polymers, osteogenic sarcoma, X-ray diffraction.

* Author to whom correspondence should be addressed. E-mail: yingzhen_wang666@yeah.net