

Crystal Structures and Anti-Ovarian Cancer Activity of Two Novel Inorganic-Organic Hybrid Supramolecular Complexes

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SUMMARY. Two new inorganic-organic hybrid supramolecular compounds based on polyoxymethylene (POM) formulated as $(\text{Ag}(2,2'\text{-bipy})_2)_8[\{\text{Ag}(2,2'\text{-bipy})\}\{\text{AlW}_{12}\text{O}_{40}\}]_2$ (**1**) and $(\text{Zn}(2,2'\text{-bipy})_3)_2[\{\text{Zn}(\text{OH})(2,2'\text{-bipy})_2\}\{\text{AlW}_{12}\text{O}_{40}\}]$ ($2,2'\text{-bipy} = 2,2'\text{-bipyridine}$) (**2**), have been prepared under hydrothermal conditions and characterized by single-crystal X-ray diffraction analyses successfully. The antitumor activity of compounds **1** and **2** were then investigated against four human ovarian cancer cells (OV2, 3AO, OVCA420, OVCA429) by MTT assay. The results showed that compared with the positive reference drug vinorebine, the two compounds displayed efficient antitumor activity.

RESUMEN. Dos nuevos compuestos supramoleculares híbridos inorgánicos y orgánicos basados en polyoxymetileno (POM) formulados como $(\text{Ag}(2,2'\text{-bipy})_2)_8[\{\text{Ag}(2,2'\text{-bipy})\}\{\text{AlW}_{12}\text{O}_{40}\}]_2$ (**1**) y $\text{Zn}(2,2'\text{-bipy})_3)_2[\{\text{Zn}(\text{OH})(2,2'\text{-bipy})_2\}\{\text{AlW}_{12}\text{O}_{40}\}]$ ($2,2'\text{-bipy} = 2,2'\text{-bipyridina}$) (**2**), se han preparado en condiciones hidrotérmicas y se han caracterizado por análisis de difracción de rayos X de cristales únicos con éxito. La actividad antitumoral de los compuestos **1** y **2** se investigó luego contra cuatro líneas celulares de cáncer de ovario humano (OV2, 3AO, OVCA420, OVCA429) mediante ensayo de MTT. Los resultados mostraron que, en comparación con el medicamento de referencia positivo vinorebina, los dos compuestos mostraron una actividad antitumoral eficaz.

KEY WORDS: antitumor activity, inorganic-organic, X-ray.

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