

## Two Novel Inorganic-Organic Hybrid Supramolecular Compounds: Crystal Structures and Anticancer Activity

Fu-long BI<sup>1</sup>, Wen-li TANG<sup>1</sup>, Bin ZHANG<sup>2\*</sup> & Ao JIANG<sup>3\*</sup>

<sup>1</sup> Medicinal Chemistry and Pharmacology Institute, Inner Mongolia University for the Nationalities, Tongliao, Inner Mongolia, China

<sup>2</sup> Affiliated Hospital of Inner Mongolia University for the Nationalities, Tongliao, Inner Mongolia, China

<sup>3</sup> China-Japan Union Hospital of Jilin University, Jilin, Changchun, China

**SUMMARY.** Two new inorganic-organic hybrid supramolecular compounds based on polyoxometalates (POMs) formulated as  $(\text{Ni}(\text{bpy})_3)\{\text{Ni}(\text{H}_2\text{O})(\text{bpy})_2\}[\text{HAIW}_{12}\text{O}_{40}]$  (**1**, bpy = 2,2'-bipyridine) and  $\{\text{Cu}(\text{H}_2\text{O})(\text{en})(\text{bpy})\}_2[\text{HAIW}_{12}\text{O}_{40}]\cdot 2\text{H}_2\text{O}$  (**2**, en = ethylenediamine), have been prepared under hydrothermal conditions and characterized by IR spectra, elemental analyses and single-crystal X-ray diffraction analyses. In addition, *in vitro* anticancer activities of compounds **1** and **2** on four human cancer cell lines (MDA-MB-231, NCI-H508, GNM and SKOV3) was further determined.

**RESUMEN.** Dos nuevos compuestos supramoleculares híbridos inorgánicos y orgánicos basados en polioxometalatos (POMs) formulados como  $(\text{Ni}(\text{bpy})_3)\{\text{Ni}(\text{H}_2\text{O})(\text{bpy})_2\}[\text{HAIW}_{12}\text{O}_{40}]$  (**1**, bpy = 2,2'-bipiridina) y  $\{\text{Cu}(\text{H}_2\text{O})(\text{en})(\text{bpy})\}_2[\text{HAIW}_{12}\text{O}_{40}]\cdot 2\text{H}_2\text{O}$  (**2**, en = etilendiamina), se han preparado bajo condiciones hidrotérmicas y se han caracterizado por espectros IR, análisis elementales y análisis de difracción de rayos X de cristales únicos. Además, se determinaron adicionalmente las actividades anticancerígenas *in vitro* de los compuestos **1** y **2** en cuatro líneas celulares cancerosas humanas (MDA-MB-231, NCI-H508, GNM y SKOV3).

**KEY WORDS:** anticancer activity, inorganic-organic, X-ray diffraction.

\* Authors to whom correspondence should be addressed. E-mails: bzh9911@163.com (Bin Zhang); jiangao0211@163.com (Ao Jiang)