



Synthesis, Crystal Structure and Anti-liver Tumor Activity of an Organic-Inorganic Hybrid Supramolecular Based on Keggin Molybdoarsenate

Wei-Min ZHANG ¹ #, Er-Ping LUO ¹ #, Jian-He GAN ¹ * & Xiao-Min SONG ²

¹ Department of Infectious, the First Affiliated Hospital
of Soochow University, Soochow, Jiangsu 215006, China

² Department of Ultrasound, Xuhui Centre Hospital, Fudan University, Shanghai 200031, China

SUMMARY. The new compound based on Keggin molybdoarsenate (Hbmb)₂[HAsMo₁₂O₄₀] (**1**) has been hydrothermally synthesized and characterized by single-crystal X-ray diffraction analysis and X-ray powder diffraction (XRPD). Compound **1** consists of the classical Keggin cluster [HAsMo₁₂O₄₀]²⁻ and the protonated organic ligands bmb. The bmb organic ligands are free in the external [HAsMo₁₂O₄₀]²⁻ cluster. In addition, the antitumor effects of **1** were studied on three human liver tumor cell lines (HHCC, HB611 and HCCLM3). Compared with the positive reference drug carboplatin, compound **1** displayed efficient antitumor activity.

RESUMEN. El nuevo compuesto basado en molibdato de Keggin (Hbmb)₂[HAsMo₁₂O₄₀] (**1**) ha sido sintetizado hidrotérmicamente y caracterizado por análisis de difracción de rayos X de un solo cristal y difracción de rayos X en polvo (XRPD). El compuesto **1** consiste en el clásico clúster de Keggin [HAsMo₁₂O₄₀]²⁻ y los ligandos orgánicos protonados bmb. Los ligandos orgánicos de bmb están libres en el grupo externo [HAsMo₁₂O₄₀]²⁻. Además, se estudiaron los efectos antitumorales de **1** en tres líneas de células tumorales hepáticas humanas (HHCC, HB611 y HCCLM3). El compuesto **1** mostró una actividad antitumoral eficaz en comparación con el fármaco de referencia positivo carboplatino.

KEY WORDS: anti-liver tumor, hydrothermally, Keggin, molybdoarsenate.

These authors contributed equally to this work

* Author to whom correspondence should be addressed. *E-mail:* jianhe_gan666@126.com