



Two Novel Mg(II)-Based Metal-Organic Frameworks Based on Two Similar C3-Symmetrical Ligands: Crystal Structures and Anti-Osteogenic Sarcoma Activity

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SUMMARY. Two new three-dimensional (3D) metal-organic frameworks, namely $\{[\text{Mg}_3(\text{BTB})_2(\text{MeOH})_2(\text{DMA})_2](\text{DMA})_2\}_n$ (I, $\text{H}_3\text{BTB} = 4,4',4''$ -benzene-1,3,5-triyl-tri-benzoic acid) and $\{(\text{NH}_2\text{Me}_2)_2[\text{Mg}_6(\text{NTB})_4(\text{OH})_2(\text{H}_2\text{O})_6](\text{DMF})_2\}_n$ (II, $\text{H}_3\text{NTB} = 4,4',4''$ -nitrotribenzoic acid), have been successfully prepared under solvothermal conditions. The analysis results show that complex I is a three-dimensional supermolecular network that generated from the 2D layers and complex II features a cluster-based framework structure with 1D triangle channels running along the *a* axis. In addition, *in vitro* anticancer activities of compounds I and II on three human osteogenic sarcoma cell lines (MG63, U2OS and Saos-2) was further determined.

RESUMEN. Dos nuevas estructuras tridimensionales (3D) metálicas-orgánicas, a saber $\{[\text{Mg}_3(\text{BTB})_2(\text{MeOH})_2(\text{DMA})_2](\text{DMA})_2\}_n$ (I, $\text{H}_3\text{BTB} = 4,4',4''$ -ácido benceno-1,3,5-triil-tri-benzoico) y $\{(\text{NH}_2\text{Me}_2)_2[\text{Mg}_6(\text{NTB})_4(\text{OH})_2(\text{H}_2\text{O})_6](\text{DMF})_2\}_n$ (II, $\text{H}_3\text{NTB} = 4,4',4''$ -ácido nitrotribenzoico), se han preparado con éxito en condiciones solvotermales. Los resultados del análisis muestran que el complejo I es una red supermolecular tridimensional que se generó a partir de las capas 2D y el complejo II presenta una estructura de estructura basada en clúster con canales triángulo 1D que se ejecutan a lo largo del eje *a*. Además, se determinó la actividad anticancerosa *in vitro* de los compuestos I y II en tres líneas celulares de sarcoma osteogénico humano (MG63, U2OS y Saos-2).

KEY WORDS: anticancer activity, four-connected, metal-organic.

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