

A Novel Oxovanadium Silicate: Inhibiting Human Liver Cancer Cell Activity *In Vitro*

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SUMMARY. Presented here is the preparation of oxovanadium silicate containing organic species as structural directing agents by using the solution preparative chemistry. The structure of this newly obtained oxovanadium silicate, $[\text{H}_3\text{N}(\text{CH}_2)_2\text{NH}_3]_2[\text{V}(\text{IV})_9(\text{OH})_8(\text{H}_2\text{O})_{12}(\text{SiO}_4)_8](\text{H}_2\text{O})_6$ (**1**) has been determined by X-ray single crystal diffraction methods. The existence of a complex intercrossing channel system, including a very large channel of 18.4 Å of diameter (in which both water molecules and ethylenediamine cation species are located), is the more interesting feature of this structure. The anticancer activity of compound **1** was then investigated against three human liver cancer cells (HB611, BEL-7402 and HHCC) by MTT assay. It was found that compound **1** showed potent antitumor activity against all of these cell lines.

RESUMEN. Se presenta aquí la preparación de silicato de oxovanadio que contiene especies orgánicas como agentes estructurales de dirección usando química de preparación de solución. La estructura de este silicato de oxovanadio, $[\text{H}_3\text{N}(\text{CH}_2)_2\text{NH}_3]_2[\text{V}(\text{IV})_9(\text{OH})_8(\text{H}_2\text{O})_{12}(\text{SiO}_4)_8](\text{H}_2\text{O})_6$ (**1**), ha sido determinada por métodos de difracción de rayos X de un solo cristal. La característica más interesante de esta estructura es la existencia de un complejo sistema de canales entrecruzados, que incluye un canal muy grande de 18,4 Å de diámetro (en el que están localizadas tanto las moléculas de agua como las especies catiónicas de etilendiamina). La actividad anticancerígena del compuesto **1** se investigó contra tres células de cáncer de hígado humano (HB611, BEL-7402 y HHCC) mediante ensayo de MTT. Se encontró que el compuesto **1** mostró potente actividad antitumoral contra todas estas líneas celulares.

KEY WORDS: liver cancer, oxovanadium silicate, X-ray.

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