

Synthesis and Crystal Structure of Two New Zn(II) and Ni(II) Complexes with Anti-Gastric Cancer Activity

Yun WENG^{1 #}, Jie SHEN^{2 #}, Yujing XIA¹ & Yanhong SHI^{1 *}

¹ Department of Gastroenterology, Shanghai Tenth People's Hospital, Shanghai, China

² Department of Gastroenterology,
Second Military Medical University Affiliated Changzheng Hospital, Shanghai, China

SUMMARY. In this study, two new heterometal-organic frameworks, [Zn(FDA)(H₂O)₃] (**1**, H₂FDA = furan-2,5-dicarboxyl acid) and {[Ni₂(H₂O)₃(OH)(HTTCA)]·H₂O}_n (**2**, H₄TTCA = [1,1':2',1''-terphenyl]-3,3'',4',5'-tetracarboxylic acid), have been prepared under solvothermal conditions and successfully characterized by single-crystal X-ray diffraction analyses. In addition, in vitro anticancer activity of compounds **1** and **2** on four human gastric cancer cell lines (BGC823, MGC803, SGC7901 and HGC27) was further determined. The results showed that compared with their organic ligands, the two compounds displayed efficient anticancer activity.

RESUMEN. En este estudio, dos nuevos compuestos heterometal-orgánicos, [Zn(FDA)(H₂O)₃] (**1**, H₂FDA = ácido furan-2,5-dicarboxílico) y {[Ni₂(H₂O)₃(OH)(HTTCA)]·H₂O}_n (**2**, H₄TTCA = [1,1':2',1''-terfenil]-3,3'', ácido 4',5'-tetracarboxílico), se prepararon en condiciones solvotermales y se caracterizaron con éxito por análisis de difracción de rayos X de un solo cristal. Además, se determinó adicionalmente la actividad anticancerígena in vitro de los compuestos **1** y **2** en cuatro líneas celulares de cáncer gástrico humano (BGC823, MGC803, SGC7901 y HGC27). Los resultados mostraron que, en comparación con sus ligandos orgánicos, los dos compuestos mostraron actividad anticancerígena eficiente.

KEY WORDS: anticancer activity, heterometal-organic, X-ray.

* Author to whom correspondence should be addressed. E-mail: yanhong_shi666@yeah.net

These authors contributed equally to this paper.