



Two Novel Ni(II) Complexes with Two Different Schiff Bases: Inhibiting Growth of Ventricular Aneurysm in Coronary Heart Disease

Yong-Mei ZHANG, Yu-Ping ZHANG, Zhi-Feng LI *

Department of Cardiology, Affiliated Yongchuan Hospital,
Chongqing Medical University, Chongqing, China

SUMMARY. By using two flexible Schiff bases H_2L_1 and H_2L_2 , two new Ni(II)-coordination compound, namely, Py_3NiL_1 (**1**) and Py_3NiL_2 (**2**) (Py = pyridine, $L_1 = 5-ClC_6H_3(O)C=NC_6H_3(O)-4-Cl$, $L_2 = 5-ClC_6H_3(O)C=NC_6H_3(O)-4-NO_2$) have been synthesized under solvothermal conditions. Single crystal X-ray structural analysis reveals that the center Ni1 atom of compounds **1** and **2** is six-coordinate in a distorted octahedral geometry, the 1D chain structure was formed by the C-H... π interaction. In addition, the π ... π interaction for **1** and the C-H...O interaction for **2** in the middle of two chains result in the formation of a 1D ribbon-like structure. The *in vitro* antitumor activities of **1**, **2** and their corresponding organic ligands Py, L_1 and L_2 were studied and evaluated, in which three human ventricular aneurysm cell lines H9C2, HCM and HL-1 were used in the screening tests.

RESUMEN. Utilizando dos bases de Schiff flexibles H_2L_1 y H_2L_2 , dos nuevos compuestos de coordinación de Ni (II), a saber Py_3NiL_1 (**1**) y Py_3NiL_2 (**2**) (Py = piridina, $L_1 = 5-ClC_6H_3(O)C=NC_6H_3(O)-4-Cl$, $L_2 = 5-ClC_6H_3(O)C=NC_6H_3(O)-4-NO_2$), se han sintetizado bajo condiciones solvotérmicas. El análisis estructural de rayos X de cristal único revela que el átomo Ni1 central de los compuestos **1** y **2** es de seis coordenadas en una geometría octaédrica distorsionada, la estructura de la cadena 1D fue formada por la interacción C-H ... π . Además, la interacción π ... π para **1** y la interacción C-H ... O para **2** en el centro de dos cadenas resultan en la formación de una estructura en forma de cinta 1D. Se estudiaron y evaluaron las actividades antitumorales *in vitro* de **1**, **2** y sus correspondientes ligandos orgánicos Py, L_1 y L_2 , en los que se usaron tres líneas celulares de aneurisma ventricular humano H9C2, HCM y HL-1.

KEY WORDS: antitumor activity, coordination compound, Schiff bases.

* Author to whom correspondence should be addressed. E-mail: zhifeng_li666@126.com