

## Two Cu(II)-Based Coordination Polymers: Treatment Activity on Children Sepsis by Reducing the Production of the Serum Procalcitonin

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**SUMMARY.** In the current study, two Cu(II)-based coordination polymers formulated as  $\{[\text{Cu}_2(\text{Py}_2\text{TTz})(\text{BDC})_2] \cdot 2(\text{DMF}) \cdot 3(\text{H}_2\text{O})\}_n$  (**1**,  $\text{H}_2\text{BDC} = 1,4$ -benzenedicarboxylic acid) and  $\{[\text{Cu}_2(\text{Py}_2\text{TTz})_2(5\text{-CH}_3\text{-BDC})_2] \cdot 3(\text{DMF}) \cdot 3(\text{H}_2\text{O})\}_n$  (**2**,  $5\text{-CH}_3\text{-H}_2\text{BDC} = 5$ -methyl-1,3-benzenedicarboxylic acid) has been constructed from rigid 2,5-bis(4-pyridyl)thiazolo[5,4-d]thiazole ( $\text{Py}_2\text{TTz}$ ) and various dicarboxylic acids ligands (1,4-benzenedicarboxylic acid for **1** and 5-methyl-1,3-benzenedicarboxylic acid for **2**). Both complexes have been studied via the single crystal X-ray diffraction along with the elemental analysis. Furthermore, the treatment effect of compounds **1** and **2** on children sepsis was evaluated and the specific mechanism was revealed. Firstly, the V-FITC/PI staining assay was performed to detect the level of the apoptotic lymphocytes during sepsis after compounds **1** and **2** treatment. In addition to this, the ELISA detection kit was carried out for the determination of the serum procalcitonin (PCT) content during sepsis.

**RESUMEN.** En el estudio actual, dos polímeros de coordinación basados en Cu(II) formulados como  $\{[\text{Cu}_2(\text{Py}_2\text{TTz})(\text{BDC})_2] \cdot 2(\text{DMF}) \cdot 3(\text{H}_2\text{O})\}_n$  (**1**,  $\text{H}_2\text{BDC} =$  ácido 1,4-benzenedicarboxílico) y  $\{[\text{Cu}_2(\text{Py}_2\text{TTz})_2(5\text{-CH}_3\text{-BDC})_2] \cdot 3(\text{DMF}) \cdot 3(\text{H}_2\text{O})\}_n$  (**2**,  $5\text{-CH}_3\text{-H}_2\text{BDC} =$  ácido 5-metil-1,3-benzenedicarboxílico) se ha construido a partir de rígido 2,5-bis (4-piridil) tiazolo [5,4-d] tiazol ( $\text{Py}_2\text{TTz}$ ) y varios ligandos de ácidos dicarboxílicos (ácido 1,4-benzenedicarboxílico para **1** y 5-metil-1,3-ácido benzenedicarboxílico para **2**). Ambos complejos se han estudiado mediante difracción de rayos X de cristal único junto con el análisis elemental. Además, se evaluó el efecto del tratamiento de los compuestos **1** y **2** en la sepsis infantil y se reveló el mecanismo específico. En primer lugar, se realizó el ensayo de tinción V-FITC/PI para detectar el nivel de linfocitos apoptóticos durante la sepsis después del tratamiento con los compuestos **1** y **2**. Además de esto, el kit de detección ELISA se llevó a cabo para la determinación del contenido de procalcitonina sérica (PCT) durante la sepsis.

**KEY WORDS:** coordination polymer, children sepsis, ligand modification,

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