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Two novel Zn(II) Complexes Based on Two Different N-Heterocyclic-Carboxylic Ligands: Inhibiting Growth of Human Cardiac Myoma Cells

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SUMMARY. **The reactions of 4-(1*H*-tetrazol-5-yl)-benzoic acid (H2tbc) and 4-pyridin-4-yl-isophthalic acid (H_2pic) with $Zn(NO_3)_2 \cdot 6H_2O$ afford two novel Zn(II) coordination polymers respectively, $[Zn(tbc)(H_2O)](DMA)$ (1) (DMA = *N,N*-dimethylacetamide) and $\{[ZnNa_2(pic)_2(H_2O)](H_2O)_4\}_n$ (2). For 1, a 2D layered configuration showing (4,4) grid-like topology. Packing this 2D layered structure along the *a* axis gives rise to a 3D supramolecular structure with 1D nano-sized channels (18.8 × 10.6 Å²) occupied by DMA molecules. For 2, a mixed-metal 3D framework composing of six-coordinated Zn(II), three-coordinated Na(I) and pic ligands. In addition, *in vitro* antitumor activities of compounds 1 and 2 on four human cardiac myoma cell lines (HCF, AC16, H9C2 and HL-1) was further determined.**

RESUMEN. Las reacciones del ácido 4-(1*H*-tetrazol-5-il)-benzoico (H_2tbc) y del ácido 4-piridin-4-il-isoftálico (H_2pic) con $Zn(NO_3)_2$ $6H_2O$ proporcionan dos nuevos polímeros de coordinación de Zn (II), $[Zn(tbc)(H_2O)]$ (DMA) (1) (DMA = *N,N*-dimetilacetamida) y $\{[ZnNa_2(pic)_2$ $(H_2O)](H_2O)_4\}_n$ (2). Para 1, una configuración en capas 2D que muestra topología (4,4) similar a una grilla. El empaquetado de esta estructura 2D en capas a lo largo del eje α da lugar a una estructura 3D supramolecular con canales 1D de tamaño nanométrico (18.8 × 10.6 Å²) ocupados por moléculas de DMA. Para 2, un marco 3D de metales mixtos compuesto por seis Zn(II) coordinados, tres Na(I) coordinados y ligandos pic. Además se determinaron adicionalmente las actividades antitumorales *in vitro* de los compuestos 1 y 2 en cuatro líneas celulares de mioma cardíacas humanas (HCF, AC16, H9C2 y HL-1).

KEY WORDS: cardiac myoma, coordination polymers, mixed-metal.

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