

Anti-inflammatory Activity in Conjunctivitis of a New Co(II) Coordination Compound

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SUMMARY. In this work, we have successfully synthesized a new three-dimensional (3-D) Co-based metal-organic framework with the formula of $[\text{Co}_4(\text{L})_2(\mu_3\text{-OH})_2(\text{H}_2\text{O})_2](\text{H}_2\text{O})_3$ (**1**, $\text{H}_3\text{L} = 5\text{-}(4\text{-}(1\text{H-tetrazol-5-yl})\text{phenoxy})\text{isophthalic acid}$), by employment of a flexible isophthalic acid-tetrazol ligand. The structure of **1** was not only confirmed by the single crystal X-ray analysis, but also by the power X-ray diffraction. Notably, **1** exhibit three-dimensional microporous framework with a (4,8)-connected **flu** topology and possesses a rare butterfly-shaped $\text{Co}_4(\mu_3\text{-OH})_2(\text{CO}_2)_6$ secondary building unit. One-dimensional channels occupied by lattice water molecules could be observed in the framework of **1**. In addition, the experimental results of anti-inflammatory activity showed that compared with its organic ligand, the title Co(II) coordination compound **1** exerted rather potent activities.

RESUMEN. En este trabajo hemos sintetizado con éxito un nuevo esquema tridimensional (3-D) metal-orgánico Co-basado con la fórmula $[\text{Co}_4(\text{L})_2(\mu_3\text{-OH})_2(\text{H}_2\text{O})_2](\text{H}_2\text{O})_3$ (**1**, $\text{H}_3\text{L} = \text{ácido } 5\text{-}(4\text{-}(1\text{H-tetrazol-5-il})\text{fenoxi})\text{isofáltico}$), mediante el empleo de un ligando de ácido isoftálico-tetrazol flexible. La estructura de **1** no sólo fue confirmada por el análisis de rayos X de cristal único, sino también por la difracción de rayos X de potencia. En particular, **1** presenta una estructura microporosa tridimensional con una topología **flu** (4,8)-conectada y posee una unidad de construcción secundaria de $\text{Co}_4(\mu_3\text{-OH})_2(\text{CO}_2)_6$ de rara forma de mariposa. Además, los resultados experimentales de la actividad antiinflamatoria mostraron que, comparado con su ligando orgánico, el compuesto de coordinación Co(II) **1** ejerció actividades bastante potentes.

KEY WORDS: anti-inflammatory, coordination framework, metal-organic.

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