Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **39** (11): 2317-21 (2020)

Received: April 17, 2020
Accepted: June 15, 2020

A New Mn(II)-Containing Coordination Complex: Protective Effect on Cerebral Infarction by Reducing hs-CRP Expression and Inflammatory Response

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SUMMARY. In this study, a new metal macrocyclic coordination complex with the chemical formula of [Mn(tdb)(bbib)](DMF)(H_2O) (**1**) has been successfully prepared by using the V-shape ligand carboxylate ligand 4,4'-(thiobis(methylene))dibenzoic acid (H_2tbd) and the N-donor ligand 6,6'-bis(1H-benzo[d]imidazol-2-yl)-2,2'-bipyridine (bbib) in the mixed solvent of water with DMF under that solvothermal reaction conditions. A refluxing treatment method was used to prepare the nanostructure **1** with good size distribution. Then we evaluated the pharmacological activity of nano **1** against cerebral infarction by measuring the hs-CRP relative expression in HBMEC after compound treatment with RT-PCR. The ELISA detection was also performed to detect the IL-1β and IL-18 content HBMEC.

RESUMEN. En este estudio se ha preparado con éxito un nuevo complejo de coordinación macrocíclico metálico con la fórmula química de [Mn(tdb)(bbib)(DMF)(H_2O) (**1**) utilizando el ligando carboxilato ligando en forma de V 4,4'-Ácido (tiobis(metileno))dibenzoico (H_2tbd) y el ligando N-donante 6,6'-bis (1H-benzo [d] imidazol-2-il) - 2,2'-bipiridina (bbib) en la mezcla solvente de agua con DMF bajo esas condiciones de reacción solvotermal. Se usó un método de tratamiento de reflujo para preparar la nanoestructura **1** con buena distribución de tamaños. Luego evaluamos la actividad farmacológica de nano **1** contra el infarto cerebral midiendo la expresión relativa de hs-CRP en HBMEC después del tratamiento compuesto con RT-PCR. La detección ELISA también se realizó para detectar el contenido de IL-1β e IL-18 HBMEC.

KEY WORDS: Macrocyclic, nanostructure, cerebral infarction, ELISA detection

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ISSN 0326 2383 (printed ed.)
ISSN 2362-3853 (on line ed.)