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A New Cu(II) Coordination Complex: Therapeutic Activity on Intracerebral Hemorrhage by Inhibiting ROS Production and Inflammatory Levels

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***SUMMARY*. A new Cu(II) coordination polymer (CP), $[Cu(L1)(DCTP)]_n$ (DMF = dimethylformamide) was synthesized by reaction of the $Cu(NO_3)_2 \cdot 3H_2O$ with the halogenated linear ligand 2,5-dichloroterephthalic acid (H_2DCTP) and the N-donor ligand 1,1´-(1,4-butanediyl)bis-1*H*-benzimidazole (L1). Its treatment effect on the intracerebral hemorrhage (ICH) was assessed and the related mechanism was evaluated at the same time. First of all, the real time reverse transcription-polymerase chain reaction (RT-PCR) was performed to determine the relative expression levels of the reactive oxygen species (ROS) related genes in the vascular endothelial cells, which reflected the intracellular ROS levels. In addition to this, the western blotting was conducted for the detection of the inflammatory responses in the vascular endothelial cells.**

RESUMEN. Un nuevo polímero de coordinación Cu (II) (CP), [Cu(L1)(DCTP)]n (DMF = dimetilformamida) se sintetizó por reacción del $Cu(NO_3)_2 \cdot 3H_2O$ con el ligando lineal halogenado ácido 2,5-dicloroterefálico (H_2DCTP) y el ligando N-donador 1,1'-(1,4-butanodiil)bis-1H-bencimidazol (L1). Se evaluó su efecto del tratamiento sobre la hemorragia intracerebral (HIC) y al mismo tiempo el mecanismo relacionado. En primer lugar, se realizó la reacción en cadena de la polimerasa de transcripción inversa en tiempo real (RT-PCR) para determinar los niveles de expresión relativos de los genes relacionados con las especies reactivas de oxígeno (ROS) en las células endoteliales vasculares, que reflejaban los niveles intracelulares de ROS. Además de esto, la transferencia Western se realizó para la detección de las respuestas inflamatorias en las células endoteliales vasculares.

KEY WORDS: Coordination polymer, X-ray, intracerebral hemorrhage

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