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Application Value of 3D Zn(II)-based Complex in Maternal Anesthesia By Blocking Sympathetic Nerves

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SUMMARY. **In this report, a new metal–organic frameworks (MOFs), [Zn(L)(bipy)]·H_2O (1) (H_3L: H_3L= 2,6-dioxopiperidine-4-carboxylic acid; bipy=4,4'-bipyridine), has been solvothermally synthesized based on d^{10} metal ion Zn(II) and organic ligands (H_3L and bipy), which has been fully characterized by the single-X ray diffraction, FT-IR and elemental analysis and so on. Furthermore, the application value of new compound in maternal anesthesia was evaluated, and the related mechanism was explored at the same time. The norepinephrine and epinephrine content in the plasma was measured with ELISA assay. In addition to this, the relative expression of adrenergic receptors on the neurons was determined with real time RT-PCR.**

RESUMEN. En este informe se presentan nuevos marcos organometálicos (MOF), [Zn(L)(bipy)]•H_2O (1) (H_3L: H_3L= ácido 2,6-dioxopiperidina-4-carboxílico; bipy=4,4' -bipiridina), se ha sintetizado solvotermalmente a partir del ion metálico d^{10} Zn(II) y ligandos orgánicos (H3L y bipy), que se ha caracterizado completamente mediante difracción de rayos X simple, FT-IR y análisis elemental, etc. Además, se evaluó el valor de aplicación del nuevo compuesto en anestesia materna y, al mismo tiempo, se exploró el mecanismo relacionado. El contenido de norepinefrina y epinefrina en el plasma se midió con un ensayo ELISA. Además de esto, se determinó la expresión relativa de los receptores adrenérgicos en las neuronas mediante RT-PCR en tiempo real.

KEY WORDS: ELISA assay, maternal anesthesia, metal-organic frameworks.

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