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Schiff Base Ligand-Lanthanide Coordination Complex: Structural Characterization and Treatment Activity on Children Nosocomial Infection

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SUMMARY. In the current study, by using a mixed-ligand synthesis approach, a new Pr(III)-containing coordination complex with the composition of $[Pr_4(acac)_6L_2(CH_3O)_2(CH_3OH)_4]\cdot 2CH^3OH$ (**1**, Hacac = acetylacetone, H_2L = N'-(2,3-dihydroxybenzylidene)picolinohydrazide) has been successfully prepared with the help of $Pr(NO_3)3\cdot 6H_2O$, a polydentate Schiff base ligand, H_2L, and a β-diketone co-ligand under solvothermal methods. Its application values on the children nosocomial infection were determined and the mechanism was explored at the same time. Firstly, the ELISA detection kit was conducted to measure the content of the inflammatory cytokines released into the plasma. Then, the real time RT-PCR was finished and the relative expression of the survival genes in the *Staphylococcus aureus* was determined.

RESUMEN. En el estudio actual, mediante el uso de un enfoque de síntesis de ligandos mixtos, un nuevo complejo de coordinación que contiene Pr(III) con la composición de $[Pr_4(acac)_6L_2(CH_3O)_2(CH_3OH)_4]\cdot 2CH^3OH$ (**1**, Hacac = acetilacetona, H_2L = N'-(2,3-dihidroxibencilideno) picolinohidrazida) se ha preparado con éxito con la ayuda de $Pr(NO_3)3\cdot 6H_2O$, un ligando de base de Schiff polidentado, H_2L, y un co-ligando de β-dicetona bajo solvotermal métodos. Se determinaron sus valores de aplicación en los niños con infección nosocomial y se exploró el mecanismo al mismo tiempo. En primer lugar, se realizó el kit de detección de ELISA para medir el contenido de las citocinas inflamatorias liberadas en el plasma. Luego, se terminó la RT-PCR en tiempo real y se determinó la expresión relativa de los genes de supervivencia en *Staphylococcus aureus*.

KEY WORDS: coordination polymer, children nosocomial infection, *Staphylococcus aureus*

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