TITLE: ANTIMICROBIAL ACTIVITY OF ct-[RuCl(NO)(dppb)(4,4-Mebipy)](PF_6)_2 AGAINST STRAINS OF Staphylococcus aureus E Staphylococcus epidermidis


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ABSTRACT:

Nosocomial infections are one of the major causes of hospital diseases and are responsible for substantial damage to health resources. Among the main microorganisms involved in nosocomial infections are Staphylococcus aureus and Staphylococcus epidermidis. This data supports the urgency to development new antimicrobial therapies. Thus, the objective of this study was to evaluate the effect of the ruthenium complex ct-[RuCl(NO)(dppb)(4,4-Mebipy)](PF_6)_2 against planktonic cells of Staphylococcus aureus ATCC25923, Staphylococcus aureus ATCC700698, Staphylococcus epidermidis ATCC12228 and Staphylococcus epidermidis ATCC35984. To evaluate the antibacterial activity of the ruthenium complex, the bacteria were incubated for 24 hours at 37 ºC with the compound diluted in concentrations ranging from 7.8 to 500 μg/mL. The susceptibility of microorganisms to the compound was evaluated by minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) tests. The ruthenium complex presented MIC values of 7.8 μg/mL against all strains tested, except S. epidermidis ATCC35984, which the MIC was 15.6 μg/mL. The MBC values was 31.2 μg/mL against S. aureus ATCC25923 and S. epidermidis ATCC12228, 62.5 μg/mL against S. epidermidis ATCC35984 and 125 μg/mL against S. aureus ATCC700698. Therefore, the ruthenium complex ct-[RuCl(NO)(dppb)(4,4-Mebipy)](PF_6)_2 may represent a therapeutic alternative against nosocomial infections associated with the microorganisms studied.

Keywords: Ruthenium complex; antimicrobials; Staphylococcus sp..

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