

TITLE: ANTIMICROBIAL ACTIVITY OF *ct*-[RuCl(NO)(dppb)(4,4-Mebipy)](PF₆)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 develop 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)](PF₆)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 °C 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 were 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)](PF₆)₂ may represent a therapeutic alternative against nosocomial infections associated with the microorganisms studied.

Keywords: Ruthenium complex; antimicrobials; *Staphylococcus* sp..

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