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BOOK OF ABSTRACTS

Silver(I) Bis-Carbene Complexes with antimicrobial properties

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The evolution of antimicrobial resistance to most drugs push researchers to develop novel, more potent and multimodal alternatives with least antibiotic effects on human body. Silver has been proven best for its broad spectrum of antimicrobial activity including those resistant to antibiotic drugs. Among silver complexes silver(I)-*N*-Heterocyclic carbene (Ag(I)-NHC) complexes have strong efficacy *in vitro* as well as *in vivo* showing efficacy against many Gram-negative as well as Gram-positive bacterial strains [1-2]. In this study we have selected three bis carbene silver complexes bearing planar ligand (Figure 1) by means of different steric hindrance and rigidity. Both free ligands and their silver complexes were synthesized and purified adapting well assessed procedures. After crystallization all compounds were identified by ^{1}HNMR and ESI MS. Silver complexes were tested on different bacterial strains: *Escherichia coli, Pseudomonas aeruginosa* and *Staphylococcus aureus.* Their activities were compared with free ligands, silver oxide and monocarbene complexes. Preliminary data demonstrate that selected Ag-complexes exhibit antimicrobial activity. Further studies will be carried out in order to set up minimum inhibitory concentrations (MICs) to choose the most promising candidate. This last step will be crucial to support the design of new antimicrobial compounds.

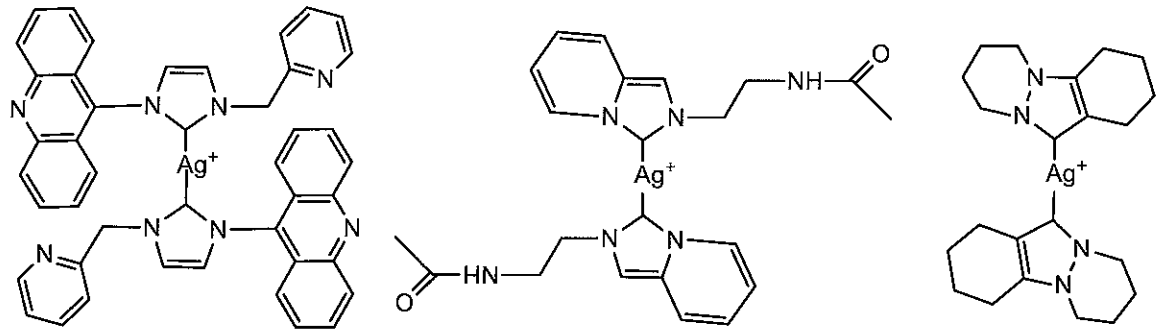

Figura 1. Molecular structure of bis carbene silver complexes

References

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