SIM
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Puca Valentina, Carradori Simone, Locatelli Marcello, Menghini Luigi, Sisto Francesca, Maiolini Claudia, Badodi Benedetta, Grande Rossella

P013 ***ID 22*** **Helix aspersa muller mucus (Helixcomplex ®) p41 protein prevents Pseudomonas aeruginosa growth and promotes mammalian bronchial epithelial cell proliferation.**
Rizzo Roberta, Bortolotti Daria, Alogna Andrea, Gentili Valentina, Rotola Antonella, Di Luca Dario, Trapella Claudio

P014 ***ID 108*** **Epigenetic modulator UVI5008 inhibits MRSA by interfering with bacterial gyrase**
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P016 ***ID 134*** **Erythromycin-loaded nanodroplets as adjuvant therapeutics for infected chronic wounds caused by Streptococcus pyogenes**
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P017 ***ID 146*** **In vitro activity of Vancomycin-loaded nanodroplets against Enterococcus spp**
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P018 ***ID 53*** **Green synthesis and evaluation of antibacterial activity of silver nanoparticles prepared by using ulvan as novel reducing and stabilizing agent from renewable algal biomasses**
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P019 ***ID 47*** **Hydroxypyridinone-based iron-chelating co-polymer (DIBI) has antibacterial activity against Staphylococcus pseudintermedius strains isolated from canine otitis externa.**
Nocera Francesca Paola, Del Carmen Parquet Maria, Holbein Bruce, Iovane Giuseppe, De Martino Luisa

P020 ***ID 159*** **In vitro antimicrobial activity of vaginal lactobacilli cell-free supernatants against uro-pathogens by time-killing curves analysis**
Scillato Marina, Mongelli Gino, Spitale Ambra, Privitera Grete, Musmeci Giorgia, Stefani Stefania, Santagati Maria

P021 ***ID 205*** **Effects of Cupral® on the formation and persistence of microbial biofilms in vitro**
Meto Aida, Colombari Bruna, Pericolini Eva, Peppoloni Samuele, **Blasi Elisabetta**

P022 ***ID 149*** **Biofilm production and rapid discrimination of L. pneumophila by matrix assisted laser desorption ionization time-of-flight.**
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P023 ***ID 219*** **Antimicrobial and antibiofilm activity of steroid derivatives against ESKAPE Pathogens**
Guaragna Annalisa, Vollaro Adriana, Esposito Anna, Antonaki Eleni, Iula Vita Dora, **De Gregorio Eliana**

P024 ***ID 154*** **Detection and Characterization of Carbonic Anhydrases in the Outer Membrane Vesicles (OMVs) Released by Helicobacter pylori in the Planktonic and Biofilm Phenotypes**
Grande Rossella, Ronci Maurizio, Del Prete Sonia, Puca Valentina, Carradori Simone, Muraro

Effects of Cupral® on the formation and persistence of microbial biofilms *in vitro*

Aida METO[1], Bruna COLOMBARI[2], Eva PERICOLINI[2], Samuele PEPPOLONI[2] and Elisabetta BLASI[2*]

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Introduction: endodontic biofilm is a microbial community, enclosed in a polymeric matrix of polysaccharide origin where are frequently found pathogenic microorganisms, such as Gram+, Gram- and opportunistic fungi, belonging to *Candida* spp, responsible for several endodontic pathologies. As clinical importance is the fact that biofilm is extremely resistant to common intra-canal irrigants, antimicrobial drugs and host immune defenses. The aim of this *in vitro* study was to evaluate the efficacy of Cupral® on planktonic forms of some pathogens, as well as to assess its ability to prevent and affect the formation/persistence of microbial biofilms.

Materials and Methods: ATCC strains of *S. aureus*, *P. aeruginosa* and *C. albicans* were exposed to various concentrations of Cupral® (an antiseptic compound based on calcium and copper hydroxide, used in endodoncy) to investigate its antimicrobial efficacy. This activity has been evaluated in terms of microbial growth and cellular doubling time (optical density, colony forming units and doubling time assays), inhibition/persistence (crystal violet staining), viability of microbial cells embedded in the biofilms (live/dead stain) and pyoverdine production (fluorimetric assay). Finally, the morphology of Cupral®-treated biofilms was investigated by optical/confocal microscopy analysis.

Results: the addition of Cupral® to microbial cultures, influences, in a significantly and dose-dependent manner, the doubling time and growth of microbial cultures. Cupral® antimicrobial activity was also assessed on biofilms formation and persistence with meaningful decreases of residual biomass (observed reductions of 47-94% for *S. aureus*, 28-95% for *P. aeruginosa* and 27-75 % for *C. albicans*). Cupral®-treated biofilms analyzed by optical and confocal microscopy revealed loss of typical sessile structure, with few scattered microbial cells and a reduced thickness. Finally, the addition of Cupral® reduced both the number of embedded alive cells in the biofilms and the levels of pyoverdine in the culture supernatants.

Discussion and Conclusions: this pilot *in vitro* study provided the first evidences on Cupral® efficacy against microbial biofilms. The wide range of action (vs Gram+, Gram- and fungi) of Cupral® strongly suggests its use as compound in the prevention and treatment of main oral biofilm-associated infections.

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