EUROPEAN SOCIETY

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#### Response of Staphylococcus epidermidis biofilms cells to the effect of farnesol

#### Abstract number: P1894

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**Objective:** *Staphylococcus epidermidis* is a leading cause of medical-device-related infections, especially in immunocompromised patients. The treatment of these infections is further complicated by the emergence of multiresistant strains. The ability of *S. epidermidis* to form biofilms on biotic and abiotic surfaces is believed to contribute significantly to the pathogenesis of these infections. Biofilms are notoriously difficult to eradicate and are often resistant to systemic antibiotic therapy. Recently, farnesol has been described as having antimicrobial properties, and therefore a possible action on the prevention of *S. epidermidis* planktonic cells but having only a slight effect on biofilm cells. So, the goal of this study was to assess the antimicrobial activity of higher farnesol concentrations (1 and 100 mM) against biofilm cells of *S. epidermidis*.

**Methods:** Two *S. epidermidis* strains biofilm-producing (9142 and 1457) were used in this study. Farnesol (0, 1 mM, 100 mM) was added to 24 h biofilm cells. Biofilm formation was assessed through crystal violet (CV) staining that measure total biomass of biofilm and cellular viability through XTT and colony-forming units (CFU/ml).

**Results:** The results didn't show a significant effect of both farnesol concentrations on biofilm biomass and activity. In fact, biofilm cell reduction was less than 2 Log, similarly to most antibiotics (e.g. tetracycline and vancomycin).

**Conclusion:** Although the reduction promoted by farnesol was less than 3 Log as requested for an antibiotic agent, its efficacy is similar to vancomycin. On account of that we are now testing the combined effect of farnesol with agents that disrupt the biofilm matrix.

#### Session Details

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