

182 Gene expression of *S. epidermidis* biofilm and biofilm released cells exposed to farnesol

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Antibiotic resistance is a serious problem in *Staphylococcus epidermidis* infections since many clinical isolates of this organism are resistant to multiple antibiotics. Associated with the fact that *S. epidermidis* main virulence factor is biofilm formation, antibiotic resistance is even more troublesome, since biofilms are known to be even more resistant to antibiotics than planktonic cultures. The need for novel antimicrobial agents led to the discovery of many natural compounds with potential antimicrobial action. Farnesol is one promising candidate to be used as an adjuvant in antimicrobial chemotherapy against biofilms, but its mechanism of action is yet unknown. We previously shown that farnesol does not shows bactericidal activity against high density biofilm cultures, but it can induce biomass detachment from established biofilms at concentrations higher than 200 μM . Here, we demonstrated by confocal microscopy and flow citometry that farnesol acts quickly and induces changes in the heterogeneous composition of biofilms. Gene expression studies revealed that in biofilms susceptible to farnesol, biomass can be reduced by action of phenol-soluble modulins activity.