Effect of Saccharomyces Cerevisiae Lysate on Staphylococcus Aureus Biofilm Formation

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Biofilm is a community of microorganisms attached to each other on a surface, which is covered by extracellular polymeric matrix (EPS). Staphylococci are known as the most common infectious agents associated with biofilm. Most infections associated with Staphylococcus aureus biofilms are difficult to treat with antibiotics. The use of probiotics is one of the ways to prevent the formation or elimination of biofilms. In the present study, effect of Saccharomyces cerevisiae, probiotic yeast, was investigated on formation of S. aureus biofilm. The 24 hour broth culture of the Indigenous S. cerevisiae yeast was centrifuged and the pellets were suspended in distilled water. The cells were lysed by sonicator and the lysate was dried by a rotary evaporator. Effect of the lysate at three concentrations of 2048, 1024 and 512 µg/ml was evaluated on biofilm formation of two standard strains of S. aureus, ATCC 29213 (methicillin-susceptible) and ATCC 33591 (methicillin-resistant), using microtiter plate assay in six replications. All three concentrations of lysate were led to a significant reduction \((P<0.001)\) in biofilm formation of both strains of S. aureus. This effect was partly dependent on the concentration for both strain and significant difference was found between concentration 2048 µg/ml to 512µg/ml.
study, the reduction in biofilm formation for methicillin-susceptible and resistant *S. aureus* was observed by *S. cerevisiae* lysate. This finding can be taken into consideration in the treatment of *S. aureus* biofilm-associated infections.

**Keywords**: Staphylococcus Aureus, Biofilm, Probiotic