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Minimum Biofilm Inhibitory Concentration of Lysostaphin on Clinical Isolates of Methicillin Resistant Staphylococcus aureus (MRSA)

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Abstract : S. aureus has the ability to colonize and form biofilms on implanted biomaterials, which is difficult to disrupt, and current antimicrobial therapies for biofilms have largely proven unsuccessful in complete eradication of biofilm. The present study is aimed to determine the lysostaphin activity against biofilm producing MRSA clinical strains. The minimum biofilm inhibition activity of lysostaphin was studied against twelve strong biofilm producing isolates. The biofilm was produced in 96-wells micro-titer plate and biofilm was treated with lysostaphin (0.5 to 16 µg/ml), vancomycin (0.5 to 64 µg/ml) and linezolid (0.5 to 64 µg/ml). The biofilm inhibitory concentration of lysostaphin was found between 4 to 8 µg/ml whereas vancomycin and linezolid inhibited at concentration between 32 to 64 µg/ml. Results indicate that lysostaphin as potential antimicrobial activity against biofilm at lower concentration is comparable with routine antibiotics like vancomycin and linezolid.

Keywords : biofilm, lysostaphin, MRSA, minimum biofilm inhibitory concentration
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