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Inhibitory Effect of Potential Bacillus Probiotic Strains against Pathogenic Bacteria and Yeast Isolated from Oral Cavity

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Abstract : The presence of resistant bacteria in the oral cavity can be the major cause of dental antibiotic prophylaxis failure. Multidrug efflux has been described for many organisms, including bacteria and fungi as part of their drugs resistance strategy. The potential use of probiotic bacteria can be considered as a new alternative in the prevention or cure of oral cavity diseases. In this study, different Bacillus strains isolated from the environment were isolated and characterized using biochemical and molecular procedures. The inhibitory activity against different pathogenic bacteria and yeast strains was tested using diffusion agar assay method. Our data revealed that the tested strains have an antimicrobial effect against the pathogenic strains such as Streptococcus mutants. The inhibitory effect was variable depending from the probiotic and pathogenic strains. The obtained result demonstrated that Bacillus can be used as a potential candidates probiotic and help in the prevention and treatment of oral infections, including dental caries, periodontal disease and halitosis. Our data, partly encourage the use of probiotic strains because they do not produce acid which can contribute to faster installation decay and these are spore-forming bacteria that can withstand the stress of the oral cavity (acids, alkalis, and salty foods).

Keywords : probiotic, pathogenic bacteria, yeast, oral cavity
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