EFFECTIVENESS OF BOVINE LACTOFERRIN IN INHIBITING BACTERIAL COLONIZATION OF STREPTOCOCCUS MUTANS

ABSTRACT

Background. The prevalence of caries in Indonesia ranged 72.1%. It is caused by infection and virulence from Streptococcus mutans (S. mutans). An alternative solution has to be done toward inhibiting caries is effective to kill bacteria. Bovine lactoferrin is a glycoprotein potentially as an antibacteria. The antibacterial potencies of bovine lactoferrin toward S. mutans bacteria could be identified by determining Minimal Inhibitory Concentration (MIC) and Minimal Bactericidal Concentration (MBC). Aim. This study is aimed to prove antibacterial potencies by identifying Minimal Inhibitory Concentration (MIC) and Minimal Bactericidal Concentration (MBC) of bovine lactoferrin toward S. mutans bacteria. Method. This study is an experimental laboratories through research design of The Post Test Only Control Group Design by using S. mutans bacteria cultured upon BHIB (Brain Heart Infusion Broth) medium and diluted according to the standard Mc.Farland 1.5 x 10⁸ CFU/ml by treating concentration bovine lactoferrin 700 μg/ml, 600 μg/ml, 500 μg/ml and 400 μg/ml and each of it was given 0.1 ml bacteria and cultured upon TYC (Tryptone Yeast Cysteine) medium. Result. In the concentration 500 μg/ml there are 9.2% bacterial growth and in the concentration 600 μg/ml there are no bacterial growth. Conclusion. Bovine lactoferrin has an antibacterial potency toward S. mutans bacteria. The MIC shows in concentration of 500 μg/ml and the MBC shows in concentration of 600 μg/ml.

Keywords: Bovine Lactoferrin, Streptococcus mutans, MIC, MBC