ABSTRACT

ANTIBACTERIAL ACTIVITY OF *Lactobacillus plantarum* ATCC 8014 FERMENTED MILK COMBINED WITH AQUOUS EXTRACT OF *Moringa oleifera* LEAVES AGAINST *Streptococcus mutans*

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*Streptococcus mutans* is a Gram-positive bacterium that lives as a normal flora in the human oral cavity. The population will be increased and caries process in the teeth will be accelerated if there is change in its environment. In recent study, combination of *Lactobacillus plantarum* ATCC 8014 fermented milk and aqueous extract of *Moringa oleifera* leaves has been observed its potential of antibacterial activity. Agar diffusion method has been applied for the antibacterial activity testing and *Streptococcus mutans* was used as bacterial test. The combination of *Lactobacillus plantarum* ATCC 8014 fermented milk and 50% aqueous extract of *Moringa oleifera* leaves was prepared in various ratio (1:9, 2:8, 3:7, 4:6, 5:5, 6:4, 7:3, 8:2, and 9:1). Observation of minimum inhibitory concentration (MIC) was carried out against the probiotic fermented milk, aqueous extract and their combination. The result indicated that the MIC of the *Moringa oleifera* leaves aqueous extract and the probiotic fermented milk was 20% and 35% respectively with 11.70 ± 0.28 mm and 12.02 ± 0.83 mm inhibition zone diameter. The optimum ratio of 50% Moringa oleifera leaves aqueous extract and *Lactobacillus plantarum* ATCC 8014 fermented milk was 2:8 obtained 16.53 ± 0.32 mm of inhibition zone diameter. The MIC of the combination at optimum ratio was 45% with 11.90 ± 0.86 mm inhibition zone diameter.

**Keyword:** Antibacterial activity, Aqueous extract of *Moringa oleifera*, Fermented milk, *Lactobacillus plantarum* ATCC 8014