Title: Antibacterial Activity of Lactobacillus acidophilus Strains Isolated from Honey Marketed in Malaysia against Selected Multiple Antibiotic Resistant (MAR) Gram-Positive Bacteria


Abstract: A total of 32 lactic acid bacteria (LAB) were isolated from 13 honey samples commercially marketed in Malaysia, 6 strains identified as Lactobacillus acidophilus by API CHL50. The isolates had antibacterial activities against multiple antibiotic resistant's Staphylococcus aureus (25 to 32 mm), Staphylococcus epidermis (14 to 22 mm) and Bacillus subtilis (12 to 19 mm) in the agar overlay method after 24 h incubation at 30 °C. The crude supernatant was heat stable at 90 °C and 121 °C for 1 h. Treatment with proteinase K and RNase II maintained the antimicrobial activity of all the supernatants except sample H006-A and H010-G. All the supernatants showed antimicrobial activities against target bacteria at pH 3 and pH 5 but not at pH 6 within 72 h incubation at 30 °C. S. aureus was not inhibited by sample H006-A isolated from Libyan honey and sample H008-D isolated from Malaysian honey at pH 5, compared to supernatants from other L. acidophilus isolates. The presence of different strains of L. acidophilus in honey obtained from different sources may contribute to the differences in the antimicrobial properties of honey. © 2012 Institute of Food Technologists®.

Subject: Antimicrobial activity; Honey; Lactic acid bacteria; Lactobacillus acidophilus

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