

**Biochemical and molecular identification of *Enterococcus* isolated from traditional fermented milk and assessment of their antimicrobial activity against some pathogens**

**<sup>1</sup>Hassan, G.M and <sup>2</sup>Abdel alim, Y.F.**

*<sup>1</sup>Genetics dept., Fac. Agric., Fayoum University, Egypt.*

*<sup>2</sup>Agriculture microbiology dept., Fac. Agric., Fayoum University, Egypt*

**ABSTRACT**

The purpose of the present work was to characterize promising starter culture strains of *Enterococcus faecium* and *Enterococcus durans* isolated from traditional fermented milk. The antimicrobial activity of *E. faecium* and *E. durans* against *Staphylococcus aureus* (MRSA), *Pasteurella multocida* and *Pseudomonas fluorescens* was evaluated. A total of 20 isolates of lactic acid bacteria were characterized using morphological characters and all the isolates were Gram-positive and catalase-negative lactic acid bacteria. Eight isolates were identified as *Enterococcus* spp using API kit and confirmed by using *Enterococcus* genus-specific primers (*Sod A*). Based on 16SrRNA gene analysis, four isolates were identified as *E. faecium* and four isolates were identified as *E. durans*. The plasmid contents and profiles of the strains were showed, all tested strains carried a certain number of plasmids ranged from 2 to 8 with different molecular sizes. Commercial kits for species identification of *E. durans* and *E. faecium* are in some cases incorrect to distinguish species of enterococci, so the molecular identification of *Enterococcus* strain play an important role in food industry as starter cultures to improve food quality and safety. Lactic acid bacterium shows interesting characteristics for use as an additional safety provision within the context of hurdle technologies to interact with other barriers for the control of food borne Gram-positive pathogens in dairy products. They may play an important role in the food industry as starter cultures to improve food quality and safety. The combination of biochemical test and molecular characterization are necessary for identification of *Enterococcus* sp