

Molecular identification of *Lactobacillus* spp. isolated from the honey comb of the honey bee (*Apis dorsata*) by 16S rRNA gene sequencing

ABSTRACT

The objective of this study was to isolate and identify novel potential probiotic *Lactobacillus* using a culture method and Polymerase Chain Reaction (PCR) amplification of the 16S rRNA gene. Seventeen *Lactobacillus* strains were isolated from a full honey comb of the honey bee *Apis dorsata* using selective media. The 16S rRNA genes from the extracted DNA of bacterial colonies were amplified with PCR using universal bacteria primers. All bacterial 16S rRNA genes were sequenced, aligned and the distant bacteria were deposited in GenBank. The lactobacilli strains were identified as *Lactobacillus* spp. related-sequences (64.15%) with other abundant sequences being related to *Lactobacillus kunkeei* (34.85%). The findings revealed that *Apis dorsata* honey comb has potential to be a source of new bacteria with probiotic activities in honey bee or as natural food preservatives for the food industry.

Keyword: 16S rRNA gene; *Apis dorsata*; Honey comb; Identification; *Lactobacillus*; Probiotics; Sequencing