

Detection and identification of Lactobacillus bacteria found in the honey stomach of the giant honeybee *Apis dorsata*.

Abstract

This is the first assay that describes the isolation and identification of strains and species of *Lactobacillus* from the honey stomach of the Asiatic giant honeybee, *Apis dorsata*. Samples of honeybees were collected from *A. dorsata* colonies in different bee trees, and *Lactobacillus* was isolated from honey stomachs using selective media. The isolates were Gram-stained and tested for catalase reaction. The 16S rRNA genes from extracted DNA of bacterial colonies were amplified with polymerase chain reaction using *Lactobacilli* genus primers (27F and 1492R). All bacterial 16S rRNA genes were sequenced and deposited in GenBank. The 34 isolated strains yielded three distinct rRNA sequences of 15 different strains. *Lactobacillus* sequences isolated from the bees' honey stomachs were comprised of *Lactobacillus kunkeei* related-sequences (56%) with other abundant sequences being related to other *Lactobacillus* sp. (38%) and *Lactobacillus vermiform* (6%). These strains can be good candidates for potential application as probiotics in honeybees and also as natural food preservatives, which, in turn, may be useful in the food industry.

Keyword: *Lactobacillus*; *Apis dorsata*; Honey stomach; *Lactobacillus* bacteria; Probiotics.