

Probiotic characteristics of exopolysaccharides-producing *Lactobacillus* isolated from some traditional Malaysian fermented foods

ABSTRACT

This study aims to evaluate the probiotic properties of *Lactobacillus* strains producing exopolysaccharides (EPS) isolated from different Malaysian fermented foods. Thirty lactobacilli species were isolated, and six of these (TAP1, PIC7, BU11, BU14, TAP16, and TEMP9) were shown to exhibit probiotic characteristics with the potential to produce EPS. The isolates were evaluated for their tolerance to low pH, bile salts, antimicrobial potential, and cell surface properties. The strains were identified using API50CHL and 16S rRNA gene sequences as *Lactobacillus* belonged to the species *fermentum* and *plantarum*. The *Lactobacillus* strains exhibited high survivability tolerance to low pH and bile salts (above 90%). All strains exhibited auto-aggregation (33.63–59.63%), co-aggregation (24.37–41.9%), and hydrophobicity (16–65.77%) ability. The strains displayed no transferrable antibiotics and antagonistic activity against pathogenic bacteria. Therefore, it indicates that *Lactobacillus* strains could act as promising probiotic candidates.

Keyword: *Lactobacillus*; EPS; Probiotics; Traditional fermented foods; Cell surface properties; Antagonistic activity