

## Functional and probiotic attributes of *Lactococcus lactis* subsp. *hordinae* HB3, a human gut isolated strain

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Probiotics have long been recognized to positively modulate several aspects of human health. According to FAO/WHO recommendations, micro-organisms isolated from human gastrointestinal tract could only be used as probiotic's for humans. Host-adapted autochthonous probiotic strains, have their genomes specialized to facilitate niche-specific fitness. Such strains exhibit higher adaptability and persistence, lower immunostimulatory potential and niche-specific metabolic activity. In the present study, we have discovered human gut-associated, probiotic *Lactococcus lactis* subsp. *hordinae* HB3 strain. It was isolation using a LAB specific medium, followed by phenotypical and biochemical characterization. The strain was molecularly identified as *Lactococcus lactis* subsp. *hordinae* through 16s rRNA genome sequence analysis. Interestingly, the strain featured important functional and

probiotic properties. It negated haemolysis of blood cells and showed susceptibility to most of the tested antibiotics. The strain exhibited tolerance to acid (pH3) and bile salts (0.5%w/v), high enzymatic (lipolytic, amylolytic and proteolytic) potential and significant antimicrobial activity ( $p < 0.05$ ). Therefore, *Lactococcus lactis* subsp. *hordinae* HB3 has the potential to be further investigated as an autochthonous putative probiotic strain for human use.

### Speaker Biography

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