HP-33: Safety Evaluation and Colonisation Abilities of *Lactiplantibacillus plantarum* as Future Probiotic

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Subject description: *Lactiplantibacillus plantarum* R10 isolated from *Bouhezza cheese* identified using the MALDI TOF-MS biotyper system and molecular tests was screened *in vitro* for selected aspects correlated with safety and colonization.

Objectives: The aim of this study was to evaluate the safety profile of *Lactobacillus plantarum* R10 and assess its ability to colonize the gastrointestinal tract as a potential probiotic strain candidate.

Methods: The safety of *Lactiplantibacillus plantarum* R10 was assessed by determining its antibiotic resistance to ampicillin, erythromycin, tetracycline, streptomycin, and ciprofloxacin using the broth microdilution method. Additionally, total DNA extracted from R10 was examined for the presence of genes associated with biogenic amine production and virulence factors using specific PCR assays. Colonization potential was evaluated by assessing cell hydrophobicity and aggregation abilities.

Results and discussion: In this study, the isolate is sensitive to all tested antibiotics. This sensitivity has been reported in numerous studies with lactobacillus. PCR results showed no amplification for virulence genes or genes involved in biogenic amine production. Regarding colonization, the isolate displayed high hydrophobicity and autoaggregation percentages.

Conclusion: *Lactiplantibacillus plantarum* R10, isolated from Bouhezza cheese, exhibited a safe profile and promising colonization properties, positioning it as a potential probiotic candidate.

Keywords: Probiotics, *Lactobacillus plantarum R10*, safety, Auto-aggregation, Hydrophobicity .