



## HP-34: Genomic characterization of *Lactiplantibacillus plantarum* R10 isolated from Bouhezza, a Traditional Algerian Cheese, as promising probiotic candidates.

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**Subject description:** In this study, *Lactiplantibacillus plantarum* R10 isolated from *Bouhezza* was evaluated for their probiotic properties, bacteriocin production and safety profile using Genomics analyses.

**Objectives:** The present work aims to study the whole genome sequence of R10 strain isolated from *Bouhezza* to characterize the bacteriocin producing gene and evaluation of its probiotic properties.

**Methods:** In the present study, *Lactiplantibacillus plantarum* named R10 isolated from an Algerian traditional goatskin bag cheese named *Bouhezza* was investigated for their probiotic characteristics using genomics analyses. The genome of the isolate was sequenced, and bioinformatic analyses were conducted to identify probiotic-related genes in addition to the screening of virulence and antibioresistance genes, to assess their safety.

**Results and discussion:** Whole genome sequencing results demonstrate the presence of various genes involved in gastrointestinal stress tolerance, adhesion to host epithelial cells, indicating bacterial adaptation of strains to the gastrointestinal environment. We also detected genes involved in the antimicrobial activity (i.e. bacteriocin). No virulence or antibioresistant determinant were found in the genome sequence. The strain R10 fulfils all the qualities of being a probiotic and the genome insights have given more information into the molecular machinery potentially involved in the probiotic effects.

**Conclusion:** These results suggest that *Lactiplantibacillus plantarum* R10 strain could be considered as promising probiotic candidate. Therefore, technological performances should be explored in order to promote their application in cheeses and other functional foods as a bio-protective or starter culture.

**Keywords:**, *Lactobacillus plantarum* R10, Probiotics genes, Genome sequencing