

# Exploring the probiotic potential of dairy industrial-relevant lactobacilli

## Supplementary Materials

### *Antifungal activity*

Among the different types of contaminants that can affect food productions, and in particular dairy production, the following are considered the most common and therefore to highlight: molds (*Penicillium candidum*), yeasts (*Debaryomyces hansenii*) and psychrophiles (*Pseudomonas fragi* and *Pseudomonas putida*). These were grown in Yeast Extract–Peptone–Dextrose broth (YPD) at 25°C and Brain Heart Infusion broth (BHI) at 25°C respectively. The antifungal activity of the lactobacilli against yeasts and moulds was evaluated measuring clear zones of inhibition using the overlay method [Magnusson and Schnürer, 2001]. The overlay method was performed using MRS agar plates on which lactobacilli overnight cultures superficially streaked for 10 mm and incubated at 30°C for 48h. The plates were overlaid with 10mL of Sabouraud soft agar (4% dextrose, 1% peptone, 0,7% agar; Oxoid) containing 10<sup>4</sup> yeast cells /mL. The plates were then incubated aerobically at 30°C and after the fungal development, the zones of inhibition were evaluated.

Supplemental Table S2 reports the data obtained against the food dairy contaminants used as target. *Pseudomonas* and *Penicillium* were the targets more affected by the presence of the LAB tested, which showed the higher values against these targets. Whereas, a lower antimicrobial activity was expressed by *Debaryomyces*. None of the four strains was able to inhibit *Candida albicans* DSMZ10697.

**Table S2.** Antimicrobial activity against food-dairy contaminants. Values are expressed as the radius in millimeters (mm) of the inhibition halos.

Strain	<i>P.fragi</i>	<i>P.putida</i>	<i>Penicillium</i>	<i>Debaryomyces</i>
<i>L. plantarum</i> PLA	++ (6.5)	++ (6.0)	+++ (7.0)	++ (5.5)
<i>L. plantarum</i> PLA2	++ (6.0)	++ (5.5)	++ (6.5)	++ (5.0)
<i>L. rhamnosus</i> RHM	++ (6.0)	++ (6.5)	+++ (7.0)	+ (4,5)
<i>L. paracasei</i> PAR4	++ (6.0)	++ (6.5)	++ (6.5)	+ (4,5)

+: positive correlation with pathogen growth inhibition.