

STUDY OF INTERESPECIFIC INTERACTIONS BETWEEN LAB (*Lactococcus* and *Lactobacillus*) ISOLATED FROM BRAZILIAN FOOD, BASED ON CRYSTAL VIOLET STAINING.

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Multispecies biofilms are predominant in almost all natural environments as one of the best multispecies biofilm models, oral microbial community. Biofilms in nature habitats are complex communities. Exploring interspecific bacterial interactions, we can be more efficiently in production processes by the action of microbial communities. In this context, we focus on the recognition of interactions between LAB species isolated from Brazilian food.

The present work aims to go further in the study of the complex interactions that take place between microbial species of LAB strains with probiotics and biotechnological traits, obtained from Brazilian's food. In order to elucidate these interactions we developed a quantitative screening of biofilm formation by bacteria when cultivated as mono- and multispecies biofilms based on crystal violet staining, measurement the biomass (or productivity) of the total biofilm and of the individual strains at 24, 48 and 72 hours. Three *Lactococcus* (*Lc. lactis* 69, 94 and 368), and four *Lactobacillus* (*Lb. helveticus* 352, *Lb. casei* 40, *Lb. curvatus* MBSa3 and *Lb. sakei* MBSa1), isolated from Brazilian foods, were teste. Tests were carried out with each LAB strain individually or in combinations of one *Lactococcus* and one *Lactobacillus* strain. Assays were performed three times with four replicates each time. The statistical significance of results was determined using a t-test (95% confidence interval). The results obtained showed the prevalence of synergistic effects in biofilm formation between these *Lactococcus* and *Lactobacillus* strains. Afterwards, the interactions was time-dependent and varied according to the *Lactococcus* strain and combination of LAB. Evaluated potential interactions in interspecific biofilms between *Lactococcus* and *Lactobacillus* isolated from Brazilian food are of utmost interest; since it can lead to a better understand of LAB biofilms and their applications as bioprotective biofilms, drawing new possibilities to future lines of research.

Key words: interspecific bacterial interactions, biofilms, LAB.

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