

# Studies on the effect of carbon source on adhesion properties of lactic acid bacterial strains

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The influence of the carbon sources present in the reconstituted MRS medium on adhesion properties of lactic acid bacterial strains *Enterococcus durans* Afm50, *Lactococcus lactis* Gfm34 and *Lactococcus lactis* Brd10 was examined. The results demonstrated that variation in the carbon sources in the reconstituted MRS medium had a significant influence on the cell surface hydrophilicity/hydrophobicity of all strains but remained the Lewis- acid/base characteristics in the outer cell surface of LAB strains. The weakly hydrophilic strains *E.durans* Afm50 and *L.lactis* Gfm34 displayed high electronegative charge whereas strong hydrophilic strain *L.lactis* Brd10 had less electronegative charge measured in terms of zeta potential as a function of pH. Model surface of polystyrene microtiter plate on adhesive ability of LAB strains revealed that the strains adhered with varying abilities on the carbon sources. Knowledge of the bacterial adhesion on various carbon sources can have advantages in food biotechnological processes.

**Key words :** Lactic acid bacteria, Carbon source, Hydrophobicity/Hydrophilicity, Surface charge, Adhesion

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