

## Effects of Medium Composition on the Production of Biomass and a Carbohydrate Isomerase by a Novel Strain of Lactobacillus

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**Abstract :** A large biodiversity of Lactobacillus strains has been detected in traditional foods and beverages from Mexico. A selected strain of Lactobacillus sp - PODI-20, used for the obtained from an artisanal fermented beverage was cultivated in different carbon sources in a complex medium, in order to define which carbon sourced induced more effectively the isomerization of arabinose by cell fractions obtained by fermentation. Four different carbon sources were tested in a medium containing peptone and yeast extract and mineral salts. Glucose, galactose, arabinose, and lactose were tested individually at three different concentrations: 3.5, 6, and 10% w/v. The biomass yield ranged from 1.72 to 17.6 g/L. The cell pellet was processed by mechanical homogenization. Both fractions, the cellular debris, and the lysis supernatant were tested for their ability to isomerize arabinose into ribulose. The highest yield of isomer was 12 % of isomerization in the supernatant fractions; whereas up to 9.3% was obtained by the use of cell debris. The isomerization of arabinose has great significance in the production of lactic acid by fermentation of complex carbohydrate hydrolysates.

**Keywords :** isomerase, tagatose, aguamiel, isomerization

**Conference Title :** ICPFF 2015 : International Conference on Probiotics and Functional Foods

**Conference Location :** Miami, United States

**Conference Dates :** March 09-10, 2015