P-241 - DOES THE PRESENCE OF LINOLEATE ISOMERASE GENE IMPLIES CONJUGATED LINOLEIC ACID PRODUCTION?

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Background
Conjugated Linoleic Acid (CLA), geometrical isomers of Linoleic Acid (LA), are of great interest for their potential health-promoting properties. Linoleate isomerase (LAI) is one of the microbial enzymes responsible of the transformation of LA to CLA and is found in several bacterial species including lactobacilli and bifidobacteria. Free LA inhibits the growth of many microorganisms, and it has been suggested that microbial conversion of LA into CLA might function as a detoxification mechanism [1].

Method
Twenty-three *Lactobacillus* and sixteen *Bifidobacterium* strains from the Food Technology department of the INIA (Madrid, Spain) collection, were activated in MRS supplemented with L-cystein, and in RCM respectively, under anaerobic conditions at 37ºC. Cultures were growth in the appropriate medium and incubated for 7 hours; then a solution of LA in TWEEN80 was added to the cultures to a final concentration of 1mg/ml, and incubated overnight. Afterwards, CLA was measured at 234 nm according to Rodríguez-Alcalá [2]. LAI gene presence was detected using primers designed for LAI genes of *Lactobacillus* and *Bifidobacterium*. PCR amplification products was subjected to electrophoresis in an agarose-TBE gel, and visualized to detect the gene presence.

Results & Conclusions
LAI gene presence was positive for all assayed *Bifidobacterium* strains. However, only 3 strains from this group showed absorbance variation above 0.500.Concerning *Lactobacillus* strains, more than 15 bacteria were LAI positive but in general absorbance variation was below 0.300. Interestingly, some positive LAI gene *Lactobacillus* did not show absorbance increment at 234 nm. In conclusion, the presence of LAI gene does not guarantee CLA production. This may be related to the fact that microorganism tolerance level to free LA is a key factor in CLA production.

References & Acknowledgments
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