

## عنوان مقاله:

Co-production of parabolic metabolites by *Lactobacillus acidophilus* LA5 and *Bifidobacterium animalis* subsp. *lactis* BB12 in dairy effluents

## محل انتشار:

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## خلاصه مقاله:

In this study, the effects of initial pH (5 – 7), temperature (30 – 38 °C) and incubation time (12 – 48 h), as well as yeast extract and free linoleic acid concentrations, respectively (0 – 4 %) and (0 – 400 μL), on the co-production of conjugated linoleic acid (CLA), exopolysaccharides (EPSs) and bacteriocins (BACs) by *Lactobacillus acidophilus* LA5 and *Bifidobacterium animalis* subsp. *lactis* BB12 and their biomass in cheese whey and milk permeate were evaluated. The results showed that biomass, CLA, EPSs and BACs activity ranged Log 0.80 - Log 8.67 g.L<sup>-1</sup>, 3.08-107.95 μg.mL<sup>-1</sup>, 107.75-351.92 mg.L<sup>-1</sup> and 9.29-14.62 mm, respectively. Yeast extract concentration was the only factor with the positive significant effect on biomass and parabolic metabolites i.e. its increasing caused to an increase in both of them (p <0.05). The temperature significantly affected the production of biomass and CLA; its increasing resulted in increasing both (p <0.05). The initial pH had significant, but different, effects on EPSs and BACs production (p <0.05) i.e. EPSs and BACs production decreased and increased, respectively, as a result of increased initial pH. Increasing free linoleic acid concentration from 0 up to 400 μL led to increased CLA biosynthesis. Higher biomass, EPSs and BACs are produced in cheese whey, compared with milk permeate, but CLA produced in milk permeate was higher than that obtained in cheese whey. *B. animalis* BB12 produced more biomass, CLA and EPSs in comparison to *L. acidophilus* LA5. However, these probiotics had no statistical difference in terms of producing BACs. This work successfully demonstrated the co-production potential of CLA, EPSs and BACs by two commercial probiotics in dairy effluents.

## کلمات کلیدی:

Parabolic, Conjugated linoleic Acid, Exopolysaccharides, Bacteriocins, probiotics, Dairy effluents

