



The Changes in Bioactive Compounds During the Fermentation of Spirulina

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Biotreatment with lactic acid bacteria (LAB) is a popular solution to degrade cyanobacterial cell walls, to produce molecules with enhanced properties. The aim of this study was to investigate the changes in L-glutamic acid (L-Glu), gamma-aminobutyric acid (GABA) and biogenic amines (BA) during the fermentation of Spirulina with *Lacticaseibacillus paracasei*; *Levilactobacillus brevis*; *Leuconostoc mesenteroides*; and *Liquorilactobacillus uvarum*. It was established, that the ratios of BA/GABA and BA/L-Glu ranged from 0.5 to 62 and from 0.31 to 10.7, respectively, as well as, the GABA content was correlated with putrescine, cadaverine, histamine, tyramine, spermidine, and spermine contents. Finally, while high concentrations of desirable compounds are formed during fermentation, the formation of non-desirable compounds must also be considered due to the similar mechanism of their synthesis.

Keywords: lactic acid bacteria; Spirulina; fermentation; gamma-aminobutyric acid; biogenic amines