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## Determination of beta-glucosidase activities of 3 lactobacilli strains in simulating gastric and intestinal digestion

Zehranur Yuksekdog and Cinar-Acar B  
University of Gazi, Turkey

$\beta$ -glucosidase, responsible for hydrolysis of cellulose is an enzyme that are produced by microorganisms and changes isoflavone  $\beta$ -glucosidases into the form of bioactive isoflavone aglycones, which are beneficial in terms of health.  $\beta$ -glucosidase has a commercially important role with its usage in various fields such as; biotechnology, food industry and pharmacology. It is quite efficient in prevention of various chronic diseases such as cancer, because it blocks the enzymes that support tumor growth. In this research, 3 strains (originated from human, food and animal) that belong to *Lactobacillus* species were used. *In vitro* conditions for simulating gastric and intestinal digestion were designed.  $\beta$ -glucosidase enzyme activities of 3 strains were evaluated by using p-nitrophenyl- $\beta$ -D glikopiranozit (p-NPG) as a substrate. We observed that in the simulated gastric phase the highest specific enzyme activity occurred at pH level of 4.0 (2.200 U/mg) at *Lactobacillus casei* SC1 while the lowest specific enzyme activity at *L. rhamnosus* MBA9 occurred at pH level of 2.0 (0.630 U/mg). On the other hand, in the simulated intestinal phase, the highest specific enzyme activity was found to take place at pH 8.0 (1.170 U/mg) at *L. casei* SC1. In this study, it has been determined that, the bacteria show high  $\beta$ -glucosidase enzyme activity by protecting their aliveness in gastro-intestinal environment. An alternative perspective has been gained for their probiotic characteristics in terms of tolerating the gastric acid environment and the gall in the intestine.

### Biography

Zehranur Yuksekdog has completed her PhD from Gazi University, Turkey and currently working as a Professor Doctor in the same university. Her areas of expertise are probiotics, microbial biotechnology and food microbiology. She has published more than 27 papers in reputed journals and serving as an Editorial Board Member, Referees in different reputed journals and has worked in 22 research projects.

[zehranur@gazi.edu.tr](mailto:zehranur@gazi.edu.tr)

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