

LACTOBACILLUS GENUS BACTERIA ANTAGONISTIC ACTIVITY AGAINST PATHOGENIC MICROORGANISMS

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Nowadays microbiology interest is focused on the microorganisms' biochemical activity rational use in the fight against humans, animals and plants microbial pathogens, as pests and in the food, industrial and agricultural production.

Biotechnology is rapidly developing the search for microorganisms that are highly competitive to the pathogenic and opportunistic bacteria. Thus, the lactic bacteria inhibit the development of putrefactive bacteria due to the lactic acid formation.

The aim of the study was to investigate the *Lactobacillus* genus bacteria antagonistic activity against strains of pathogenic bacteria. Five *Lactobacillus* strains isolated from non-profit autofermented savory Vietnamese products were used: *L. paracasei* ONU 520, *L. brevis* ONU 521, *L. plantarum* ONU 522, *L. plantarum* ONU 523, *L. rhamnosus* ONU 524.

The *Lactobacillus* genus strains antagonistic properties were studied against four main pathogenic bacteria strains: *Escherichia coli* ONU 90, *Bacillus subtilis* ONU 24, *Pseudomonas aeruginosa* ONU 211, *Staphylococcus aureus* ONU 223 from the Odessa Mechnikov National University Department of Microbiology, Virology and Biotechnology Microorganisms Collection.

Lactobacillus genus bacteria antagonistic activity research was performed using agar well method.

Each of the studied *Lactobacillus* genus antagonistic bacteria strains had a constant activity range on pathogenic bacteria *E. coli* ONU 90, *B. subtilis* ONU 24 and *P. aeruginosa* ONU 211 strains. The largest diameter growth inhibition zones were formed by *L. brevis* ONU 521 (10-14 mm), *L. plantarum* ONU 522 (13-15 mm) and *L. plantarum* ONU 523 (12-14 mm) strains. *L. rhamnosus* ONU 524 strain antagonistic activity also was noted by growth inhibition zones formation but with less diameter (11-12 mm). *L. paracasei* ONU 520 strain had a very low antagonistic activity with hardly detectable growth inhibition zones (1-2 mm). None of the studied *Lactobacillus* antagonistic strains showed any growth inhibition on *S. aureus* ONU 223 strain, which could be attributed to the lactobacilli antagonistic influence sensitivity absence.

Lactobacillus genus bacteria strains were able to perform significant antagonistic activity against pathogenic bacteria strains, which usually inhabit human intestines, and thus have the further use prospect in the dysbiosis treatment and correction.