

Therapeutic potential of *Bacillus* probiotics for enteric disease

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Bacillus bacteria are gaining wider attention as more scientific data confirm beneficial effects of these microorganisms on the host. Bacillus bacteria were shown to produce digestive and lytic enzymes, essential amino acids and vitamins, antibiotics with unique spectrum of activity, and other biologically active substances. Bacilli are traditionally used in some countries as starter cultures for food preparation. We isolated and thoroughly examined a new *B. subtilis* strain with broad spectrum of antagonistic activity against pathogens. High activity of this strain against pathogenic microorganisms, determined in vitro, was confirmed in animal studies. Oral treatment of mice with probiotic culture was effective in protecting of animals against experimental *Campylobacter* infection. High efficiency of *B. subtilis* strain in treatment of acute diarrhea was demonstrated in randomized double-blind controlled clinical trials, conducted according to the approved protocol. Treatment of patients with salmonellosis and shigellosis resulted in complete elimination of pathogens from intestine in 3 – 4 days without antibiotic therapy. No side effects or treatment-related complications were found during clinical trials. Bacillus bacteria have a great potential as probiotics and therapeutics.

Biography

Iryna Sorokulova is a Professor of Microbiology, Department of Anatomy, Physiology and Pharmacology, College of Veterinary Medicine, Auburn University, USA. She received her M.S. degree in Microbiology from Taras Shevchenko Kiev State University (Ukraine) and Ph.D. and D.Sc. degrees in Microbiology from Institute of Microbiology and Virology, National Academy of Sciences of Ukraine. She has received a solid background in formulation and regulation of biological products during the training courses in Bureau of Biologics (Ottawa, Canada) and Massachusetts Biologic Laboratories (Boston, USA). Dr. Sorokulova is the author of 73 refereed scientific publications, 4 books, and 23 patents.

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