

PHENOTYPICAL AND GENOTYPICAL ASSESSMENT OF RESISTANCE OF KLEBSIELLA PNEUMONIAE STRAINS PRODUCING CARBAPENEMASE

Anna Samoilova, Ivan Likhachev, Elizaveta Rogacheva

St. Petersburg Pasteur Institute - St. Petersburg (Russian Federation)

Abstract

Lactic acid bacteria (LAB) are essential ingredients in probiotic foods, intestinal microflora, and dairy products that are capable of coping up with harsh gastrointestinal tract conditions and are available in a variety of environments. The objective of this study is to evaluate the probiotic property of LAB isolated from bovine milk. Milk samples were collected from local dairy farms. Samples were obtained using sterile test tubes and transported to a laboratory in the icebox for further biochemical characterization. Preliminary Physiological and biochemical identification of LAB isolates was conducted by growing on MRS agar after ten-fold serial dilution. Seven of the best isolates were selected for the evaluation of the probiotic property. The LAB isolates were checked for resistance to antibiotics and their antimicrobial activity by disc diffusion assay and agar well diffusion assay respectively. Bile salt hydrolase activity of isolates were studied by growing isolates in BSH medium with bile salt. Cell surface property of isolates was assayed by studying their autoaggregation and coaggregation percentage with *S. aerues*. All isolates were found BSH positive. In addition, BCM2 and BGM1 were susceptible to all antibiotic disks except BBM1 which was resistant to all antibiotic disks. BCM1 and BGM1 had the highest autoaggregation and coaggregation potential respectively. Since all LAB isolates showed gastro intestinal tolerance and good cell surface property they could be considered as good potential probiotic candidates for treatment and probiotic starter culture preparation..

Biography:

Samoilova A. is a junior researcher of Department of New Technologies. Research interests are antibiotic resistance and virulence of *K. pneumoniae* strains, as well as the development of kits for determining the antibiotic susceptibility of bacteria. The results of scientific activities have been published in the form of articles in peer-reviewed journals.

Likhachev I. is a junior researcher of Department of New Technologies. I am engaged in the development of commercial reagent kits for the quantitative assessment of the susceptibility of microorganisms to antimicrobial drugs (by the method of serial dilution and gradient diffusion). At the moment, the preparation of scientific and technical documentation is underway to obtain a registration certificate for these test systems.

Rogacheva E. is a researcher-microbiologist with experience in scientific and medical institutions. The main area of research interests is the antibiotic resistance of microorganisms of the ESKAPE group, nosocomial infections and the development of new antibacterial drugs. The analysis of the data obtained over the years of work allowed me to publish research results in the form of scientific articles in peer-reviewed journals (23) and make presentations at Russian (7) and international conferences (3), as well as become a leader (1) and executor (3) in grant projects.

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