

TECHNOLOGICAL FEATURES OF PROBIOTICS PRODUCTION FOR IMPACTING ON INTESTINAL BIOECENOSIS

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Probiotics are live microorganisms that, when used in adequate amounts, cause an improvement in the health of the patient. This definition lays down the basic requirements for drugs that claim to be classified as probiotics. [1]: probiotics must be phenotypically and genotypically classified, must be kept alive during their transport to the intestine, must be safe, must not be pathogenic, must be acid-resistant capsule, must be capable of adhesion to the intestinal epithelium, must be capable of colonizing the intestine. Only strains that have proven their clinical efficacy in placebo-controlled studies can be used for the production of probiotics. These microorganisms can also be classified according to their origin: fermented milk strains (*Lactobacillus fermentum*, *acidophilus*, *bulgaricum*, *casei*, *plantarum*, *Bifidobacterium lactis*, *Streptococcus thermophilus*, *Enterococcus faecium*); donor strains (*Bifidobacteriae bifidum*, *B. longum*, *B. infantis*, *B. adolescents*, *L. rhamnosus GG*, *L. gassed*, *Enterococci faecium*, *salivarius*); antagonist strains (*Saccharomyces boulardii*, *Bacillus subtilis*) [2].

It should be noted that the survival of bacteria depends on the production technology and storage conditions of the drug. The destructive effect of gastric juice on unprotected microorganisms should be taken into account. It has been proven that only a small number of strains of lactobacilli and bifidobacteria are acid-resistant, most microbes die in the stomach. In the small intestine, probiotic microbes are exposed to bile acids and pancreatic enzymes. As a result, many microorganisms are almost completely killed [2]. The action of probiotics is not limited to a simple colonization of the intestines, as is often represented in advertising. Their influence is more complex and multifaceted. These are, for example, competition with pathogenic and opportunistic microflora, adhesion to the intestinal mucosa and interaction with epithelial cells [1]. Unfortunately, probiotic strains, despite having beneficial effects, are not equivalent to their own indigenous microflora and cannot multiply in the intestines. It is desirable that the probiotic preparation be normobiota strains that are as compatible as possible with resident strains and the local immune system [1].

In view of the constant scientific advances in this industry and the development of the market for probiotics, it is relevant to develop competitive biotechnologies for probiotic preparations that can meet the specified requirements and therapeutic properties.

References:

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