«Biotechnology of starting culture capable of cholesterol metabolism»

Problem statement

- Problem statement: The objective of the studies is to screen the strains of probiotic bacteria for their ability to metabolize cholesterol when developing on different nutrient media and to develop a biotechnology of a starter culture based on them.
- Task 1: Identification the ability strains of probiotic bacteria of the genus Lactobacillus and Bifidobacterium to metabolize cholesterol in vitro and in vivo.
- Task 2: Identification the antagonistic effect of the studied strains of microorganisms against each other.
- Task 3: Determination of the rational parameters of biotechnology of starter cultures capable of cholesterol metabolism.
Materials and methods:

- The ability of probiotic strains to reduce cholesterol levels in vitro was studied using the modified method of M. Ziarno.
- The decrease in cholesterol level (in %) was calculated using the Zlatkis-Zak formula.
- The effect of the created starter cultures with probiotic bacteria on cholesterol metabolism in vivo was studied in white SHK mice of both sexes.
Conclusions

Results, implementation

• The ability of the studied strains of probiotic bacteria of the genus Lactobacillus and Bifidobacterium to metabolize cholesterol both in vitro and in vivo has been revealed.
• It has been found that the studied strains of microorganisms do not show antagonistic effects against each other.
• It has been shown that the use of SK-X3 and SK-X4 starter cultures led to a decrease in the total cholesterol blood level in the animals by 38.5% and 33.3%, respectively.
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