INFLUENCE OF LACTOBACILLUS AND BIFIDOBACTERIUM ON INTERFERONOGENESIS AND PHAGOCYTIC CELLS ACTIVITY


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It is known that probiotic influence on development of cellular and humoral immune response changing variety of immune regulating cytokines, first of all Th1-type cytokines. Therefore search of Lactobacillus and Bifidobacterium with immune modulating properties for creation new highly effective probiotics preparations is an actual problem.

The aim of investigation is to define immune modulating properties of Lactobacillus and Bifidobacterium by research of their influence on production of endogenous interferon and also functional activity of phagocytosis system cells on murine experimental model.

It was studied the influence of Lactobacillus and Bifidobacterium on interferonogenesis and functional activity of phagocytosis system cells in vivo.

There were used freeze-dried Lactobacillus and Bifidobacterium of different strains: Bifidobacterium bifidum, Bifidobacterium longum, Lactobacillus acidofilus, Lactobacillus casei, Lactobacillus bulgaricus. Preparations separately were injected per os to mice of line BaLb/c with body mass 18-20 g throughout 4 days once a day. A standard interferon inducer ridostine was used as a comparison.

It was established that Bifidobacterium bifidum, Bifidobacterium longum, Lactobacillus acidofilus, Lactobacillus casei, Lactobacillus bulgaricus as well as standard interferon inducer ridostine in vivo had activating influence on production of endogenous interferon that proved to be true by essential increase of interferon titer in blood serum of mice during 6 days. For 12 days the interferon titer in blood serum did not exceed a control value. Lactobacillus acidofilus and Bifidobacterium longum have appeared the most effective inducing agent of both “early” and “late” interferon. The simultaneous injection of Bifidobacterium bifidum, Bifidobacterium longum, Lactobacillus acidofilus, Lactobacillus casei, Lactobacillus bulgaricus led to more significant increase of interferon titer in mic blood serum comparing with the influence of the single strain.

The introduction of Bifidobacterium bifidum, Bifidobacterium longum, Lactobacillus acidofilus, Lactobacillus casei or Lactobacillus bulgaricus to mice was accompanied by increase of functional activity of phagocytosis system cells proved by stimulation of oxygen-depending bactericide and absorbing activity of peritoneal macrophages.

As our date testifies the composition on the basis of Bifidobacterium bifidum, Bifidobacterium longum, Lactobacillus acidofilus, Lactobacillus casei or Lactobacillus bulgaricus is the most perspective for probiotic-immunotherapy.