

Immunostimulatory effect of unmethylated CpG bacterial DNA

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From filtrate *B. subtilis* DNA (factor of 260/280 - 1,75-1,85) was extracted. Identification of DNA fractions was made by electrophoresis in vertical polyacrylamide gel plates with 0.1% sodium dodecyl sulfate. Presence of unmethylated CG-dinucleotides in bacterial DNA was determined by restriction analysis with endonuclease Hpa-II. Cytological activity of killer cells was studied by cytolysis. CpG DNA effect on phagocytic and metabolic activity of peritoneal macrophages was carried out. In vitro and in vivo effect of CpG DNA on phagocytic activity and oxygenation dependent oxidative metabolism of peritoneal macrophages was examined.

Fractions of extracted DNA from *B. subtilis* 7025 and GP1-807-03 were similar with pronounced, permanent components of molecules - 2650 and 3050 base pairs of nucleotide. DNA showed high sensitivity to Hpa-II, indicating high content of unmethylated CG- inucleotides. Injection of BALB / c CpG DNA led to development of transient pleural lymph node hyperplasia in mice.

Ability of macrophage to enter into phagocytosis was observed (Hamburg index) and their absorptive capacity was increased (Wright index).

CpG DNA has a dose-dependent effect on the cytolytic activity of natural killer cells and sensitivity to unspecific cytolysis. Index grow up to 24% ($p < 0,05$) as compared to 16% in the control.

Bacterial CpG DNA is a inducer of interferon. Effect of CpG DNA on development of humoral immune response was studied in a reaction-dependent cytolysis. Thus bacterial CpG DNA showed immunogenic properties and pronounced immunomodulating activity.

Biography

Kozak Oksana Vledlenivna has been working as a medical physicist in Radiotherapy Department in Region Oncology Hospital and completed her PhD in oncology and radiobiology on the topic "Optimization of radioiodine treatment in thyroid cancer patients" in 2002. Her additional work in Institute of experimental pathology, oncology and radiobiology deals with biochemistry of tumors.

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