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EFFECT OF MITOCHONDRIAL UNCOUPLER 2,4-DINITROPHENOL ON THE GROWTH OF TRANSPLANTABLE ADENOCARCINOMA OF MAMMARY GLAND OF MICE CA755

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It is known that different mitochondrial inhibitors can decelerate tumor growth. 2,4-Dinitrophenol (DNP) belongs to a special group of substances that cause uncouple respiration and phosphorylation in mitochondria resulting to mitochondrial ATPase activation and loss of ATP in the cell. Previously, it was shown that DNP activates apoptosis and causes a tumor cell death in the culture. In present work we studied the effect of DNP on the growth of transplantable subcutaneously mice adenocarcinoma of mammary gland Ca755. DNF was given to mice with drinking water in the concentration of 800 and 200 mg/L. The inhibition of tumor growth was recorded at a concentration of DNF 200 mg/L. DNF in high concentration (800 mg/L in drinking water) inhibited the tumor growth in the early stages, but then the growth accelerated, apparently due to the toxic effect of high concentration on the system's energy metabolism. The possibility of using uncouplers as antitumor agents in combination with glycolysis inhibitors and (or) cytotoxic drugs is discussed.

Keywords: 2,4-dinitrophenol, uncouplers, antitumor activity