A CYTOTOXIC EFFECT OF THE UNCLASSIFIED GROUP K ROTAVIRUSES ON T98G AND U87MG CELLS *IN VITRO*

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The development of new oncolytic viruses based therapeutic approaches is one of the promising and rapidly developing areas in modern oncology, including in the treatment of low-grade gliomas. The genetically modified improved variants of known viruses with enhanced therapeutic activity are now created. However, the potential of the natural diversity of human viruses is still not fully exhausted. Earlier, new strains of viruses were discovered at the Rostov Institute of Microbiology and Parasitology, later described as rotaviruses of the K group, which showed significant antitumor activity in animals with transplanted human ovarian cancer. Here, we study *in vitro* the direct oncolytic effects of selected viral strains on human glial tumor cultures U87MG and T98G. According to the MTT test, the presence of dose-dependent cytotoxic activity of both studied strains was demonstrated, especially for the strain № 100 at a concentration of 10^8 particles/ml after the U87MG cell culture expose. The data were confirmed by flow cytometry. The cytotoxic activity of the studied strains of viruses was confirmed in an apoptosis test using annexin V. The morphological observations also verify the development of degenerative changes observed in the studied cell cultures under the influence of the group K rotaviruses.

Keywords: oncolytic viruses, U87MG cell culture, T98G cell culture, MTT test, Annexin V test, rotaviruses of the K group