BIOLOGICAL ACTIVITY OF ANTHRAQUINONE DERIVATIVES

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Viral infections occupy an important place in human infectious pathology, thereby imposing a huge toll on both human health and the economy worldwide. At present, the influenza A virus and vesicular stomatitis virus cause different infections in human population. Therefore, screening of the new effective drugs is an urgent and important problem. The aim of the work was to study the cytotoxic and antiviral effects of anthraquinones. In this work, compounds F3, F9, F10, E85A, E85, and E59 were studied.

The experimental compounds cytotoxicity was studied in seven cell lines (Wish, MDCK, Hep-2, A549, Raji, B95-8, and CHO) by MTT assay. It was determined that studied anthraquinones cause significant different cytotoxicity effect on cell culture. However, the investigational substances were low-toxic for epithelial cell culture, CC_{50} were in the range 200 – 500 µg/ml. It was also found that F3 and E85A compounds had a cytotoxic effect on virus-associated Raji cells comparing to other cell lines used in the experiment CC_{50} for F3 and E86A (27.0 and 0.45 µg/ml, respectively). The F9 and F10 compounds had activity against vesicular stomatitis virus, and F3 compound inhibited replication of influenza virus as determined by crystal violet staining. Consequently, all derivatives of anthraquinone may be considered as potential antiviral agents.