The cytofluorimetric characteristics of RNAse influence towards pro-and eucariotic cells

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Abstract

Cytotoxic ribonucleases (RNAses) are known to be perspective drugs for cancer therapy. The extension of model object's range will give possibility to assess the cytotoxic RNAse's selectivity. We estimated the effect of Bacillus intermedius ribonuclease (binase) and bovine RNAse A to E. coli K 12 and lung epithelia of cow embryo (LEC) cells. LEC cells apoptosis was characterized with a double staining with annexin-FITC and propidium iodide (PI). E. coli K12 cell's vitality was estimate via PI staning. Binase and RNAse A were not cytotoxic to LEC and E. coli K12 cells in investigated concentrations (100 and 300 μg/ml). Low RNAse's toxicity for E. coli allows to suppose the binase and RNAse A in concentrations, capable to display antitumor activity, will not to effect the tissue's microbial flora during in vivo tests. The lack of apoptosis inducing activity of binase for LEC cells confirms this RNAse selectivity for tumor cells.

Keywords

Apoptosis, Binase, Cytotoxic RNAses, LEC, RNAse A, Selectivity