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TESTING THE ANTIGENOTOXICITY PROPERTIES OF PRUNELLA GRANDIFLORA L. EXTRACT USING THE EXAMPLE OF DROSOPHILA MELANOGASTER

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Abstract. The use of antitumor drugs, for example, etoposide, entails an increase in the frequency of mutagenesis and recombination due to the presence of a genotoxic effect. Thus, one of the tasks in testing protective substances that presumably have antigenotoxic properties is to identify various types of side effects when using a protector and an antitumor drug together. The protective properties of *Prunella grandiflora* L. extract were investigated in 10% concentration relative to the drug used, etoposide at a dose of 800μg/kg and 8000μg/kg of nutrient medium. To determine the frequency of mutations and recombinations, SMART lines of *Drosophila melanogaster* (females y//y and males w sn/ Y) were used. F_1 hybrid females were analyzed for the number and type of spots (*y, sn*) indicating cases of mutations and recombinations. According to the results obtained, the extract, when combined with etoposide at a dose of 800μg/kg, reduces the frequency of aberrant phenotypes, but does not affect the frequency of occurrence of certain types of spots. Thus, among 873 flies, 14 spots of different types and 3 aberrant phenotypes were found, whereas when exposed to etoposide, 13 spots and 9 aberrant forms were found among 669 individuals. Etoposide in both doses mainly caused *singed*-type spots. In the case of exposure to 8000 μg/kg of etoposide, the use of 10% *P. grandiflora* extract is also effective in reducing the frequency of aberrant types in hybrid females. Using the alkaline method, DNA comets showed the absence of genotoxic manifestations in *P. grandiflora* extract of 10% concentration relative to the nutrient substrate. When exposed to 800 μg/kg of etoposide using 10% extract, the DNA comet index increased by 18% compared to the standard nutrient substrate.

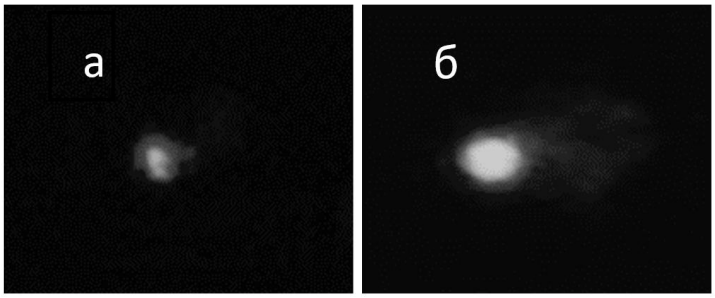

Figure 1. The main types of DNA damage: a) control, b) etoposide+extract