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INDUCTION OF DNA DOUBLE-STRAND BREAKS BY X-RAYS UNDER THE INFLUENCE OF THE COMBINATION OF DNA REPAIR INHIBITORS IN B16 MURINE MELANOMA CELLS.

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In recent years, the studies aimed at changing cell radiosensitivity are of special interest, especially for malignant cells. Special attention is paid to the research on the formation and repair mechanisms of DNA double-strand breaks (DSBs), as they are the most severe molecular damage to DNA and can lead to cell death. Therefore, research focusing on understanding the formation and repair patterns of DNA breaks in tumor cells under the influence of ionizing radiation and the presence of DNA repair inhibitors is an urgent area of modern radiobiology research. In this research, the DNA Comet Assay method was used to determine the dependence of the frequency of DNA DSB formation and their repair kinetics in melanoma B16 cells upon X-ray irradiation under normal conditions and in the presence of inhibitors of DNA repair, 1- β -D-arabinofuranosylcytosine (AraC) and Benzamide. The obtained results showed that under the combined action of ionizing radiation and DNA repair inhibitors, the greatest amount of DNA DSBs is formed.

Summary

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