Contribution ID: **263** Type: **Oral**

INDUCTION AND REPAIR OF DNA DOUBLE-STRAND BREAKS IN HIPPOCAMPAL NEURONS OF MICE OF DIFFERENT AGE AFTER EXPOSURE TO 60CO γ-RAYS IN VIVO AND IN VITRO

One of the central problems of modern radiobiology is the study of mechanisms of induction and repair of DNA damages in central nervous system cells, in particular, in hippocampal cells. The study of the mechanisms of formation and repair of molecular damage in the hippocampus nerve cells is of special interest, because these cells, unlike most cells of the central nervous system, keep proliferative activity, i.e. ability to neurogenesis. It was found that the hippocampus plays a key role in the formation of long-term memory, in the integration of brain information and its distribution in the higher brain regions. Age-related changes in hippocampus play an important role, which could lead to changes of radiosensitivity in neurons to the ionizing radiation exposure.

With a DNA comet assay, regularities have been studied in the induction and repair of DNA double-strand breaks (DSBs) in hippocampal neurons of mice of different age in vivo and in vitro after exposure to 60Co γ-rays. The obtained dose dependences of DNA DSB induction are linear both in vivo and in vitro. It is established that in young animals' neurons, the degree of DNA damage is higher than in older animals. It is shown that repair kinetics is basically different for exposure in vivo and in vitro.

Primary author: Ms KOZHINA, Regina (Alekseevna)

Co-authors: Ms KUZMINA, Eugenia (JINR LRB); CHAUSOV, Vladimir (JINR)

Presenter: Ms KOZHINA, Regina (Alekseevna)

Track Classification: Life Science