

Acute gamma-irradiation of mice BALB/c strain in dose range from 1 Gy to 3 Gy can lead to change in RAPD and I

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The aim of this work is the study hereditary effects of ionizing radiation on mice progeny, whose parents were irradiated on different stages of spermatogenesis. Male mice BALB/c strain were acute irradiated by γ -radiation at doses 1, 2 and 3 Gy on gamma-unit GYPOS (dose rate- 4,5 Gy/min, source- Cs-137). For comparison of sensitivity of different stages of spermatogenesis males were crossed with females the same strain in two weeks (post meiotic stage) and in three months (pre meiotic stage) after an irradiation. The offspring in both cases contained in standard conditions and were killed in the 3-4 weeks of age. DNA was isolated from liver by using DNA PrepTM (IZOGEN Lab). Amplification was performed by using lyophilized PCR-mix DNA CoreTM (IZOGEN Lab) on thermocycler PT-48 (TDL Company). Products of amplification were separated in 1,5 % agarose gel and visualized by ethidium bromide. For detection effects of irradiation was used RAPD- and ISSR-assays. Analysis of offspring patterns carried out on the basis of comparison with parental patterns, with the purpose of registration of new, "not parental" bands, as case of mutation. We are counting mutation frequency per animal in the group and processed these data statistically. Our results are show, that beginning at dose 1 Gy, mutation frequencies in irradiated offspring is significantly distinguished from the control group. At the same time, change of mutation frequencies is independent of increasing of the irradiation dose. The comparison of sensitivity different stages of spermatogenesis is indicated, that post-irradiated changes in RAPD- and ISSR-patterns of pre and post meiotic cells have similar character.