

Life span alteration after irradiation in *Drosophila Melanogaster* strains with mutations of HSF and HSPS

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The life span alteration after low doze gamma-irradiation in *Drosophila* wild type strain *Canton-S* and strains with mutations of heat shock factor (*1-4* alleles) and heat shock proteins (*Hsp70Ba*³⁰⁴, *Hsp83*^{e6A}, *Hsp22*^{EY09909}) was investigated. Chronic gamma-irradiation (0.017 and 0.17 cGy/h) on pre-imago stages was used as a priming dose (absorbed doses were 6 and 60 cGy). Paraquat, a free radical inducing agent, was a challenging factor (20 mM for one day). It was shown that chronic irradiation led to adaptive response in all samples except homozygous males and females with mutations of *Hsf*^{fl} and *Hsp70Ba*³⁰⁴. The adaptive response persisted in *Hsp22* homozygous males, but not in females. *Drosophila Hsp* and *Hsf* mutation homozygotes did not demonstrate the adaptive response in the majority of cases, implying an important role of those genes in radioation hormesis.