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184 The short-term immune capacity changes in ICR mice after single whole-body low-dose radiation.
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In this research, ICR mice divided into control group (0rads), low-doses groups (20, 50rads) and high doses group, (100, 300, 500rads). After radiation, the serum IgG and IL-2 concentrations were tested and the morphologic changes of spleen and cytokines secretion of splenocytes and thymocytes were observed. The results of serologic data indicate that the serum IL-2 concentrations of low-dose groups animals immediate increase after 1 day and the serum IgG concentrations of low-dose groups animals increase significantly after 14 days. The splenocytes express more active and hyperplasia in all three groups. The cytokines results indicated low-dose irradiation could increase the IL2, IL4 and TNFα secretion of splenocytes after day 1 and day 3. In conclusion, these results suggest the low-dose radiation might benefit the immune capacity of ICR mice mediated by regulation of cytokines production. But the mechanisms of immune capacity changes are confused.

185 Cellular Senescence That Does Not Require Telomerase Repression in Rodent Cells

There is increasing evidence that telomere length functions as molecular clock of replicative lifespan of human cells. In contrast to human somatic cells whose telomerase activity is strictly repressed, rodent somatic cells, in general, have telomerase activity and are susceptible to cellular immortalization in vitro, suggesting the possibility that a mechanism different from that in human cells may be responsible for cellular senescence in rodent cells. Therefore, we investigated telomerase activity, telomere length and replicative lifespan in culture of mouse (ME), rat (RE) and Syrian hamster (SHE) embryo cells. We examined two culture conditions, where the cells were inoculated at a density of 2 X 10⁵ into a 25 cm² flask and subcultured every 3 days (3T2) or 10 days (10T2). As reported previously, nearly 100% cultures of rodent cells escaped from senescence and immortalized when they were subcultured by 10T2 culture. In the present study, we found that most SHE cells senesced after 30 population doublings with retaining a substantial level of telomerase activity when they were subcultured by 3T2 culture. The result indicates that in rodent cells there exists a senescence pathway that does not require telomerase repression and that this senescence pathway can be bypassed by modification of culture condition.