196 Effects of continuous γ-irradiation with low dose-rate on spleen, thymus, and gonads of mice.

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Long-term effects of continuous gamma-irradiation with a low dose-rate were studied on CF#1-JCL mice which had been inadiated during whole reproductive period, namely from conception until adult age (70 to 160 days old). The dose-rate used was about 5.7×10^{-2} Gy/22hr-day, and the total accumulated doses were approximately 5.13～10.26 Gy for each mouse ranging 70～160 days old. The organ weights were measured on spleen, thymus, and gonads (ovaries and testes). The splenic and thymic weights of the control group were greater than that of the inadiated same age group, but significant differences were not clearly found out.

The hazardons effects of continuous irradiation were clearly demonstrated in the ovaries and the testes of inadiated groups : organ weight loss and remarkable histopathological destraction were observed in the gonads of irradiated males and females.

197 The protective effect of IL-11 on radiation induced colitis with rats

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Aim : IL-11 is a pleiotropic cytokine involved in cell proliferation and differentiation. Because several different lines suggest that IL-11 may prosess the anti-inflammatory effects in IBD models, we evaluate the effect of IL-11 on radiation induced colitis. **Methods :** Eight-weeks male WKY/Izm rats were used. Distal colon was exposed and then received a focal 30 Gy irradiation. They were divided into two groups. The early treatment group was pretreated with 200μg/kg /day IL-11 s.c., moreover, treated with IL-11 until 10 day after irradiation, when ulcer was developed. The late treatment group was injected with IL-11 as well at 10-21 days after irradiation, in which mucosa is re-epithelized. As a control study, 0.1% BSA was infused. Colon were resected at 1, 3, 5, 7, 10 and 21 days, respectively. The tissues were examined histologically. To evaluate the degree of tissue damage and inflammatory response, we counted the number of TUNEL-or myeloperoxidase (MPO)-positive cells in irradiated portion. Furthermore, to confirm the target cell for IL-11, both IHC and ISH for its receptor were carried out. **Results :** The numbers of both TUNEL and MPO positive cells were decreased in irradiated colon after IL-11 treatment with significant decrease of ulcer index. IL-11 receptor positive cells were predominantly localized in both mucosal epithelium and capillary endothelial cells. These results were confirmed by ISH at the transcript level. **Conclusion :** This study indicate that IL-11 may play a protective role in radiation colitis by reducing inflammation and apoptosis via its receptor .

198 Occurrence of hypertension and nephropathy in rats exposed to tritiated water (HTO) as infants (2nd report)

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Lethality and physiological disorders were studied by tritium β particles. Newborn CD/Crj rats received i.p. of saline diluted HTO at the 5 different doses ranging between 0 to 32, 56 MBq/g B.W.

At 4 weeks of age, rats with HTO over 24.42 MBq/g B.W. was fatal especially in the male, but it was not obvious under 16.28 MBq/g B.W. The systolic, diastolic and mean blood pressures measured at 13, 23 and 30 weeks of age were significantly increased more than 16.28 MBq/g. B.W. of HTO. About 50% of rats exposed to over 24.42 MBq/gB.W. of HTO showed nephropathy characterized with cystic dilatation of nephrons and collapsed glomerulei associated with hypertension.