Preliminary pulse radiolysis data indicate that both e^-_{aq} and OH radicals react with this compound, giving a transient absorption in the UV region.

EARLY AND LATE EFFECTS OF ^{55}FE CYTOCIDE. U. REINCKE, H. BURLINGTON, E. P. CRONKITE and J. LAISSUE, Medical Research Center, Brookhaven National Laboratory, Upton.

A single intravenous injection of $^{55}FeCl_3$ of high specific activity ($\geqslant$1 mCi/μg Fe) has marked early and late effects. The isotope, characterized by short-ranged deposition of decay energy (1 μm path length for 6 keV Auger electrons) and 2·7 years half-life, effects immediate and ongoing cytocide in the differentiated erythroid cell line. This is demonstrated in C57BL mice after 3 days by absolute and differential bone marrow counts and by reduced ^{59}Fe tracer uptake in blood. Recovery of ^{59}Fe uptake to normal values occurred 15 days after 0·7 mCi or 1·4 mCi/mouse but not after 2·8 mCi. Mice in the latter group died within 4–6 weeks. Periods with stable but moderately reduced peripheral blood counts were observed in the 2 lower-dose groups: RBC $\sim$ 7 to 8.$10^6/\mu$l and WBC $\sim$ 4000/μl after 1·4 mCi, RBC $\sim$ 9 .$10^6/\mu$l and WBC $\sim$ 5000/μl after 0·7 mCi. Cold-iron treated controls showed RBC values of $\sim$ 10.$10^6/\mu$l and WBC of $\sim$ 10,000/μl. The reduction of WBC is mainly borne by low lymphocyte counts. Reticulocyte counts were in the low normal range of 3–6 $\times$ $10^4/\mu$l blood after initial depression. In spite of these mild symptoms, bone marrow cellularity was significantly reduced in 2 mice killed accidentally 4 months after 0·7 mCi. Panmyelophthisis appears to be invariably the cause of spontaneous death, ending a short terminal phase which follows the stabilized period. Survival time is inversely related to ^{55}Fe dose. Although these features are consistent with the notion of exhausted regenerative ability of haematopoietic stem cells, definite conclusions cannot be drawn before the syndrome is more fully characterized.

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THE ROLE OF THE SPLEEN IN THE REPOPULATION OF THE HAEMOPOIETIC SYSTEM OF MOUSE RADIATION CHIMAERAS. G. SILINI, L. V. POZZI and U. ANDREOZZI, Laboratorio di Radiobiologia Animale, CSN Casaccia del CNEN, Roma.

An auxiliary role of the spleen in the repopulation of the haemopoietic system after irradiation is often claimed but direct quantitative data to support this view are very scanty. Experiments have therefore been performed to elucidate the respective role, influence and contribution of spleen and marrow in the haemopoietic regeneration of irradiated (C57 BL $\times$ C3H)F_1 female mice. Data to be presented pertain mainly to the effect of splenectomy on the CFU content and growth in the femur of endogenous and exogenous isogeneic radiation chimaeras repopulated by spleen or marrow cells. Analysis of data as a function of time shows that the presence of the spleen affects the repopulation of marrow by progenitor cells only at the very early post-irradiation stages. The marrow CFU however continue to expand rather independently and remain eventually as the only source of haemopoietic cells. Thus, the reaction of the spleen represents a fast, important but brief contribution to the overall haemopoietic function of heavily irradiated animals.

ARTERIAL WALL DAMAGE BY X-RAYS AND FAST NEUTRONS. M. W. AARNOUDSE and H. B. LAMBERTS, Laboratory for Radiopathology, Groningen.

Irradiation of arteries in the hypercholesterolaemic rabbit causes severe atheromatosis, *i.e.* by depolymerization of the mucopolysaccharides in the vessel wall.

Following the results of Aarnoudse and Lamberts (*Int. J. radiat. Biol.*, 1971, **20,** 437), who observed that the RBE of 14 MeV neutrons in other mucopolysaccharide systems is < 1 (synovial fluid, connective tissue membranes), it is to be expected that the arteries will be damaged less by neutrons than by x-rays.

A total number of 148 rabbits, divided over several groups were irradiated with 2 doses, 500 and 1000 rad, to compare the effects of neutrons and x-rays on the carotid arteries. The result of this investigation is that with a dose of 500 rad the plaque forming effect of neutrons is more, and with 1000 rad it is less, extensive than the effect