

PRODUÇÃO TÉCNICO CIENTÍFICA
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Microdistribution and localized dosimetry of ^{238}U in beagle bones

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The distribution of fission tracks from the bone surface and bone marrow-seeking radionuclide ^{238}U in the beagle femoral shaft, have been studied using a fission fragment technique. Transversal femoral cuts of beagles, which were fed from 3 to 18 months long periods with different concentrations of uranyl nitrate (240 and 1200 KBq/Kg of ^{238}U) were sandwiched between Makrofol E slides. The set was irradiated by neutron with flux of $10^{13} \text{ n} \cdot \text{cm}^{-2} \cdot \text{s}^{-1}$ in the water cooled reactor of IPEN (SP).

The results show that accumulative doses are concentrated in the central bone marrow, which had been observed previously for alkaline earth metals as radium, strontium and calcium [1]. The main radiological implication suggested by our findings is that the radiation burden in marrow is substantial, with a dose rate of the order of 20Gy/d.

[1] N.D. Priest. The distribution and behavior in bones of heavy metals in then skeleton and body: Studies with bone-seeking radionuclides. In trace Metals and Fluoride in Bones and Teeth, p 83-139. CRC. Press, London, 1990.

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