

Radiostrontium - Exploratory Studies

M.A. Van Dilla

After reviewing the salient features of the $\text{Sr}^{90}\text{-Y}^{90}$ decay series, the possibilities for in vivo assay of this material in beagles was discussed. Y^{90} content can be assayed in K-9 via bremsstrahlung counting (results to date on 6 beagles injected with $\text{Sr}^{90}\text{-Y}^{90}$ show that the lower limit of sensitivity in K-9 is about 1-10 microcurie). Use of Sr^{89} and Sr^{85} (as a tracer) would make the measurement problem easier and completely feasible.

Preliminary results (using K-9) on 6 beagles injected intravenously with 100 uc/kgm show a Y^{90} retention of about 50% 1-3 weeks after injection.

Hematological studies on these dogs show a depression in numbers of cells per cubic millimeter similar to that caused by radium and plutonium but to a greater degree (i.e., $\text{Sr}^{90}\text{-Y}^{90}$ appears more toxic). Bone marrow study shows a depression below normal of the ratio of developing white cells to developing red cells.

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