

Event: AF#0046: Simultaneous Determination of Fe-59, Cr-51, and I-125, Using a Gamma Spectromet ...

Event Primary Information

Event Key Classification: *unknown/Uncertain* *Trace*

Full Title: AF#0046: Simultaneous Determination of Fe-59, Cr-51, and I-125, Using a Gamma Spectrometer

Start Date (mm/dd/yy): 10/ 67

AIR1.941130.073a

End Date (mm/dd/yy): 01/ 68

Abstract: *Summary: Radioisotopic dilution technique tracer study to study erythrokinetics, blood volume parameters and ferrokinetic studies. The total exposure with each dose of the three radioisotopes is 141.3 millirem. Establishes a standard methodology for the simultaneous measurement of ferrokinetics, erythrokinetics and blood volume parameters. Abstract: In scintillation spectrometry, there are methods for separating 59Fe from 51Cr activity, and 51Cr from 125I activity, but no standard method has been presented for the simultaneous measurement of 59Fe, 51Cr, and I-125. In this study, a well-type scintillation spectrometer and discriminator were used to determine the activity of these three isotopes in one sample. The procedure is based on the use of "contributory factors" which remain constant and can be used in the calculation of various blood parameters. The mixed sample was counted at each of three previously determined settings and corrected for background. Then, the net 59Fe count equaled the total count at the 59Fe setting; the net 51Cr count equaled 10% of the count at the 59Fe setting subtracted from the count at the 51Cr setting; and the net 125I count equaled the sum of 7.5% of the net 59Fe count plus 7.0% of the net 51Cr count subtracted from the count at the I-125 setting. The method can be used to separate the activity of any group of three or more gamma-emitting isotopes if their energy peaks are well separated. (Internal Medicine Branch Armstrong Laboratory)*

Point of Contact information

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Investigators Information

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Notes:

* P-Principle, A-Associate

Facility where Event took place information

Facility: Internal Medicine Branch, Brooks Air Force Base, San Antonio, TX

Address: Brooks Air Force Base

City: San Antonio

State: TX

ZIP:

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