

**Use of Combined Alpha Spectrometry and Fission Track Analysis for the Determination of  $^{240}\text{Pu}/^{239}\text{Pu}$  Ratios in Human Tissue**

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Plutonium and other actinides were determined in human autopsy tissues of occupationally exposed workers who were registrants of the United States Transuranium and Uranium Registries (USTUR). In this study, Pu was purified and isolated from Am, U and Th, after drying and wet-ashing of the tissues, and the addition of  $^{238}\text{Pu}$  as a radiotracer. After electrodeposition onto vanadium planchets, the  $^{239+240}\text{Pu}$  activity was determined by alpha spectrometry. A fission track method was developed to determine  $^{239}\text{Pu}$  in the presence of  $^{238}\text{Pu}$  and  $^{240}\text{Pu}$ , using Lexan<sup>TM</sup> polycarbonate detectors. Combining the two techniques allowed the determination of the  $^{240}\text{Pu}/^{239}\text{Pu}$  activity and atom ratios. Data from selected USTUR cases are presented

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