

**Determination of  $^{232}\text{Th}$  and Progeny in Human Reticuloendothelial Tissues Using Alpha Particle Track Autoradiographic Microdosimetry from Thorotrast**

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Targeted alpha therapy has the properties of direct ionization, oxygen independency, high linear energy transfer, a short half-life, and minimal depth of penetration, which are advantageous in cancer treatment. This modified, inexpensive, high-resolution, autoradiographic study of  $^{232}\text{Th}$  decay in a tissue specimen, to both locate and quantify individual alpha-particle origins, track lengths, and dose rates, utilized conventional Ilford Pan F Plus, 135–36, Black and White, 35 mm, ISO 50 film. Dose rates measured 0.14 cGy d<sup>-1</sup> in the liver, 0.03 cGy d<sup>-1</sup> in the right kidney, and 0.003 cGy d<sup>-1</sup> in the heart, leading to a dosimetric concern of where the final alpha-particle deposition occurs.

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