

## **<sup>219</sup>Ra**

In 1952, <sup>219</sup>Ra was discovered by Meinke et al. and the results were reported in the paper “Further work on heavy collateral radioactive chains” ([1952Me13](#)). Thorium targets were irradiated by helium ions in the Berkeley 184-inch cyclotron. <sup>227</sup>U was chemically separated and the decay and energy of  $\alpha$ -particles were measured with an alpha-particle pulse analyzer. “An additional short-lived chain collateral to the actinium (4n+3) natural radioactive family has also been partially identified. This chain decays as follows:  $U^{227} \rightarrow Th^{223} \rightarrow Ra^{219} \rightarrow Em^{215} \rightarrow Po^{211} \rightarrow Pb^{207}$ .”

Adapted from reference ([2013Fr09](#))

[1952Me13](#) W. W. Meinke, A. Ghiorso, and G. T. Seaborg, Phys. Rev. **85**, 429 (1952).

[2013Fr09](#) C. Fry and M. Thoennessen, At. Data Nucl. Data Tables **99**, 497 (2013).

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