

²¹⁷Tl

²¹⁷Tl were discovered by Alvarez-Pol et al. and the results were published in the 2010 paper “Production of new neutron-rich isotopes of heavy elements in fragmentation reactions of ²³⁸U projectiles at 1A GeV” (2010A124). A beryllium target was bombarded with a 1 A GeV ²³⁸U beam from the GSI SIS synchrotron. The isotopes were separated and identified with the high-resolving-power magnetic spectrometer FRS. “To search for new heavy neutron-rich nuclei, we tuned the FRS magnets for centering the nuclei ²²⁷At, ²²⁹At, ²¹⁶Pb, ²¹⁹Pb, and ²¹⁰Au along its central trajectory. Combining the signals recorded in these settings of the FRS and using the analysis technique previously explained, we were able to identify 40 new neutron-rich nuclei with atomic numbers between Z=78 and Z=87; ²⁰⁵Pt, ^{207–210}Au, ^{211–216}Hg, ^{214–217}Tl, ^{215–220}Pb, ^{219–224}Bi, ^{223–227}Po, ^{225–229}At, ^{230,231}Rn, and ²³³Fr.”

Adapted from reference (2013Fr04)

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Please cite this abstract as: “FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:[10.11578/frib/2279152](https://doi.org/10.11578/frib/2279152)”