^{213}Th

^{213}Th was discovered in 1968 by Valli and Hyde in "New isotopes of thorium studied with an improved helium-jet recoil transport apparatus" (1968Va18). ^{16}O beams with a maximum energy of 166 MeV from the Berkeley heavy ion linear accelerator HILAC bombarded ^{206}Pb targets to produce ^{213}Th in (9n) fusion-evaporation reactions. Recoil products were deposited on a metallic surface in front of a semiconductor detector with a helium gas jet. "Thorium-214 and Thorium 213: ...At a beam energy of 142 MeV an α energy of 7.680±0.010 MeV and a half-life of 125±25 msec were found and assigned to ^{214}Th. At a beam energy of 157 MeV an α energy of 7.690±0.010 MeV and a half-life of 150± 25 msec were obtained and assigned to ^{213}Th."

Adapted from reference (2013Fr03)

1968Va18 K. Valli and E. K. Hyde, Phys. Rev. **176**, 1377 (1968).
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Please cite this abstract as: "FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:10.11578/frib/2279152"