

^{117}Cd

The isotope ^{117}Cd was first correctly identified by Goldhaber et al. in 1939 in “Radioactivity Induced by Nuclear Excitation” (1939Go02). Cadmium was irradiated with neutrons produced by bombarding lithium with deuterons of 950 KeV at the Cavendish Laboratory. Decay curves were measured with a Geiger-Müller counter following chemical separation. The observation of ^{117}Cd was only mentioned in a footnote: “They [Cork and Thornton (1937Co01)] also reported a radioactive isotope of In of 2.3-hr. half-life time which they ascribed to In^{117} and which appeared to grow from a 58-hr. Cd parent. We find this indium isotope only when we precipitate indium from the cadmium solution in a time less than two days after irradiation. By successive separations we find that it grows from a 4-hr. Cd parent, a radioactive isotope which has been previously reported by Cork and Thornton and at the time assumed to be Cd^{115} .” This half-life was assigned to ^{115}Cd in a table and must have been produced by neutron capture on ^{116}Cd . As mentioned by Goldhaber et al., Cork and Thornton in 1937 had reported half-lives of 58 h and 4.3 h and incorrectly assigned them to ^{117}Cd and ^{115}Cd , respectively (1937Co01). A few months later Mitchell (1937Mi01) measured half-lives of 52 h and 5 h, agreeing with the assignment by Cork and Thornton. Seven months after the submission of the Goldhaber paper, Cork and Lawson independently reversed their assignment of newly measured half-lives of 56 h and 3.75 h to ^{115}Cd and ^{117}Cd , respectively (1939Co04).

Adapted from reference (2010Am04)

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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)”