^{155}Tb

"Nuclear spectroscopy of neutron-deficient rare earths (Tb through Hf)" was published in 1957 by Mihelich et al. describing the observation of ^{155}Tb (1957Mi67). Different enriched rare earth elements were irradiated with 12−22 MeV protons from the ORNL 86-inch cyclotron. The resulting activities were measured with a conversion electron spectrograph and a scintillation counter following chemical separation. "Tb^{155}(5.6 days)→Gd^{155}: ... By superimposing spectrograms, one is able to make a very sensitive test as to the 'identicality' of sets of conversion lines. Hence, it was evident that we were indeed producing Tb^{155}. To confirm our results, we irradiated two targets with 12-MeV protons to produce the $(4p,n)$ reaction alone; the targets were enriched in masses 155 and 156, respectively. Although neither target was enriched to a high degree, the relative intensity of the Tb^{155} and Tb^{156} transitions were consistent with the isotopic enrichment factors." Previously reported half-lives of ∼1 y (1948Wi02) and 190(5) days (1950Wi13) were incorrect.

Adapted from reference (2013Ma01)

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Please cite this abstract as: "FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:10.11578/frib/2279152"