^{177}Lu

The identification of ^{177}Lu was reported by Atterling et al. in 1945 in "Neutron-induced radioactivity in lutecium and ytterbium" (1945At02). Lu_2O_3 samples were bombarded with fast and slow neutrons produced by bombarding LiOH with 6 MeV deuterons and beryllium with 6.5 MeV deuterons from the Stockholm cyclotron, respectively. The resulting activities were measured with a Wulf string electrometer and a Geiger-Müller counter. "'We find two periods in lutecium, 3.67 h. and 6.6 d. With slow neutrons both periods are activated strongly, the 6.6 d. period being the stronger as regards the saturation activity. With fast neutrons, however, the 3.67 h. period is much more strongly activated than the long-lived activity... As will be seen from the isotope-diagram in [the figure], the above mentioned variation in the activities of the two periods caused by the different methods of activation very strongly indicates that the 6.6 d. period should be assigned to Lu^{177}." Previously a 5 d activity was measured without a specific mass assignment (1935He03) and 6 d (1938Po05) and 6−7 d (1936He02) were assigned to ^{176}Lu. Flammersfeld and Bothe assigned a 6.6 d activity to ^{176}Lu and a 3.4 h activity to ^{177}Lu (1943Fl02).

Adapted from reference (2012Gr19)

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