

⁵⁵Cr

In the 1952 publication “⁵⁵Cr, ein neues Chrom-Isotop mit T = 3,52 min Halbwertszeit” Flammersfeld and Herr reported the discovery of ⁵⁵Cr (1952FI21). Slow neutrons produced in the reaction of deuterium on beryllium at Mainz University bombarded a pure chromium-oxide target and ⁵⁵Cr was produced by neutron capture on ⁵⁴Cr. Decay curves were measured following chemical separation. “Es lag nahe, die gemessene Aktivität auf ein durch unvermeidbare schnelle Neutronen aus dem Hauptisotop des Chroms nach ⁵²Cr(n,p) gebildetes ⁵²V (T = 3,77 min) zurückzuführen, um so mehr als Absorptionsversuche nahezu die gleiche β -Energie wie beim ⁵²V ergaben. Bestrahlungen mit und ohne Cadmium zeigten aber, daß die Aktivität aus dem Chrom hauptsächlich mit thermischen Neutronen entsteht, also ein (n, γ)-Prozeß vorliegen muß.” [The measured activity could have been from the decay of ⁵²V (T = 3.77 min) produced in the reaction ⁵²Cr(n,p) due to the presence of fast neutrons, especially because absorption measurement resulted in β -decay energies similar to the decay of ⁵²V. However, irradiations with and without cadmium demonstrated that the activity was produced predominantly by thermal neutrons, thus it was due to the (n, γ) process.] Previously reported half-lives of 1.7 h (1937Po04), 2.27 h (1940Di01), 1.6 h (1940Am01), and 1.3 h (1947Se33) were incorrect.

Adapted from reference (2012Ga06)

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