

²⁵³Lr

The discovery of ²⁵³Lr was reported in 1985 in the paper “The new isotopes ²⁵⁸105, ²⁵⁷105, ²⁵⁴Lr and ²⁵³Lr” by Heßberger et al. (1985He22). ²⁰⁹Bi targets were bombarded with 4.65, 4.75, 4.85, and 4.95 MeV/u ⁵⁰Ti beams from the GSI UNILAC accelerator forming ²⁵⁷Db in the (2n) fusion-evaporation reaction. ²⁵³Lr was then populated by α -decay. Recoil products were separated with the velocity filter SHIP and implanted in seven position-sensitive surface barrier detectors which also measured subsequent α -decay and spontaneous fission. “Isotope ²⁵³Lr: This isotope was found in the α -decay chains of ²⁵⁷105. Two α lines with mean energies $E_{\alpha 1,2} = 8,800, 8,722$ keV could be attributed to it. The measured half-life is $T_{1/2} = (1.3^{+0.6}_{-0.3})$ s.” This state corresponds to an isomer and the ground state half-life of 0.57^{+7}_{-6} s was reported sixteen years later by Hessberger (2001He35) who previously published their results in a proceeding (1999He11). Earlier an upper limit for spontaneous fission of ²⁵³Lr was reported (1976Og02).

Adapted from reference (2013Th02)

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