^{138}Tb

In 2026, Suzuki et al. discovered ^{138}Tb in "Discovery of proton-rich radioactive isotopes in the Z = 63-70 region produced by the projectile fragmentation of a 345-MeV/nucleon ^{238}U beam" (2026Su06). The RIKEN RI factory delivered the ^{238}U beam to a 1 mm thick beryllium target. The large-acceptance two-stage separator BigRIPS was used to separate the fragments. A thin tantalum foil at the first dispersive focus reduced the fraction of less-exotic contaminants. The fragments were identified with the TOF$-B\rho-\Delta E$ method. "In total, 14 new isotopes were obtained with the ^{135}Tb and ^{146}Yb settings based on the evaluation shown in the NNDC as of October 2025: $^{132,133}_{63}$Eu, $^{133,134,136}_{64}$Gd, $^{136,137,138}_{65}$Tb, $^{138}_{66}$Dy, $^{143}_{67}$Ho, $^{143}_{68}$Er, $^{144}_{69}$Tm, and $^{147,148}_{70}$Yb."

Previously, the identification of ^{138}Tb in the fragmentation reaction of a 30 MeV/nucleon ^{197}Au had only been reported in a conference proceedings (2000So11).

2000So11 G. A. Souliotis, Phys. Scr. T **88**, 153 (2000).

2026Su06 H. Suzuki, N. Fukuda, H. Takeda, Y. Shimizu *et al.*, Prog. Theor. Exp. Phys. **2026**, 023 (2026).

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