

²⁸¹Rg

In the 2010 paper “Synthesis of a new element with atomic number $Z = 117$ ”, Oganessian et al. reported the first observation of ²⁸¹Rg ([2010Og01](#)). A ²⁴⁹Bk target was bombarded with 252 MeV and 247 MeV ⁴⁸Ca beam from the Dubna U400 cyclotron to form ²⁹³117 and ²⁹⁴117 in (4n) and (3n) evaporation reactions, respectively. ²⁸¹Rg was populated by subsequent α -decays. The residues were separated with a gas-filled recoil separator and implanted in a semiconductor detector array. Alpha particle decay and spontaneous fission events were recorded in this array and in eight detectors arranged in a box configuration around the implantation detector. “Despite the strong hindrance resulting in the relatively long half-life, SF is a principal decay mode of the odd-even nucleus ²⁸¹111. On the other hand, the heavier isotope ²⁸²111 undergoes α decay.” Five decay chains involving ²⁸¹Rg were observed.

Adapted from reference ([2013Th02](#))

[2010Og01](#) Yu. Ts. Oganessian, F. Sh. Abdullin, P. D. Bailey, D. E. Benker *et al.*, Phys. Rev. Lett. **104**, 142502 (2010).

[2013Th02](#) M. Thoennessen, At. Data Nucl. Data Tables **99**, 312 (2013).

Please cite this abstract as: “FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:[10.11578/frib/2279152](https://doi.org/10.11578/frib/2279152)”