^{163}Ta α decay 1986Ru05,1992Ha10,1985Li14

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 157 (2012)	31-Dec-2010

Parent: ^{163}Ta: E=0; $T_{1/2}$=10.6 s *18*; Q(α)=4749 *5*; %α decay≈0.2

^{163}Ta-J^{π}: From systematics, 2003Au02 propose $J^{\pi}=1/2^{+}$.

^{163}Ta-Q(α): From Eα=4632 *5*. Value is that reported by 2009AuZZ and 2003Au03 and assumes that the α transition feeds the ^{159}Lu g.s.

^{163}Ta-$T_{1/2}$: From the ^{163}Ta Adopted Levels (2010Re03).

^{163}Ta-%α decay: 0.2%, from $T_{1/2}(\alpha)$=84 min from extrapolation of log $T_{1/2}(\alpha)$ versus log Eα for ^{157}Ta and ^{159}Ta as given in the evaluation of the properties of the ^{163}Ta g.s. (2010Re03). Also, from calculations by 1997Mo25, $T_{1/2}(\beta)$=8.2 s and $T_{1/2}(\alpha)$=7200 s, which corresponds to %α=0.11%. Other: measured %α < 0.32 (1987HaZO).

Additional information 1.

1985Li14: produced by ^{175}Lu(^{3}He,15n) with E=280 MeV and mass separation. Si and Ge detectors.

1992Ha10, 1987HaZO: produced by Ca(^{127}I,xn), α excitation functions measured for six α groups from E(^{127}I) of 540 to 711 MeV. α's measured in Si detector and γ's in Ge detector.

1986Ru05, 1988MeZY: produced by ^{133}Cs(^{36}Ar,6n), E=218, 234, and 255 MeV. He-jet. Measured α's and α(t) with Si detector and γ's and x-rays with Ge detector. Mass identification from excitation functions. γ's reported by 1985Li14 were obscured by radiations from other activities.

1983Sc18: Eα=4625 *15* line assigned to ^{164}Ta decay actually belongs to ^{163}Ta decay.

^{159}Lu Levels

E(level)
0.0

α radiations

Eα	E(level)	Comments
4633 *5*	0.0	Eα: Weighted average of: 4630 *10* (1986Ru05 and 1988MeZY, with several authors in common with 1986Ru05); 4635 *8* (1987HaZO); and 4625 *15* (1983Sc18, originally assigned to the ^{164}Ta) decay. Other: 4635 *7* (1992Ha10, with the same authors as 1987HaZO). It is assumed that this transition feeds the ^{159}Lu g.s.