^{184}Au α decay (47.6 s) 1995Bi01

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 126, 151 (2015)	1-Feb-2015

Parent: ^{184}Au: E=68.46 *4*; $J^{\pi}=2^+$; $T_{1/2}$=47.6 s *14*; Q(α)=5234 *5*; %α decay≤0.016

^{184}Au-%α decay: %α=0.013 *3* (1995Bi01). 1995Bi01 assumed the α-decay is from the 69 keV isomeric state of ^{184}Au, yet it is possible the decay comes from both ground state and the 69 keV state. Other: <0.022 *4* (1970Ha18).

1995Bi01:^{184}Au activity produced in Ta(^{12}C,X) with E(^{12}C)=153 MeV. Channel selection performed with FeBIAD ion source and a mass separator. Measured Eα, Iα, Eγ, $\gamma\gamma$-, $\gamma\alpha$-, and xα-coincidences using a Si(Li) detector for α particles and electrons and a Ge(Li) detector for γ- and x-rays.

Other: 1970Ha18.

Additional information 1.

^{180}Ir Levels

E(level)[†]
0
80.4 *5*
113.5 *5*
167[‡] *5*
212.4 *5*

[†] From Eγ, except where noted.
[‡] From Eα.

α radiations

1995Bi01 assumed the α-decay is from the 69 keV isomeric state of ^{184}Au, yet it is possible the decay comes from both ground state and the 69 keV state.

All α's, except those of 5187 keV, are in coincidence with the K_α x-rays.

Eα[†]	E(level)	Iα[†@]	HF[‡#]	Comments
4980 *5*	212.4	10.7 *5*	>10	
5024 *5*	167	10.3 *5*	>19	
5065 *15*	113.5	6.5 *5*	>57	Eα: Other: 5066 *20* (1970Ha18).
5109 *5*	80.4	46.7 *5*	>12	Eα: Other: 5108 *15* (1970Ha18).
5187 *5*	0	25.7 *5*	>50	Eα: Other: 5172 *15* (1970Ha18).

[†] From 1995Bi01.
[‡] From 1995Bi01, assuming the α-decay is from the 69 keV isomeric state of ^{184}Au.
[#] r_0=1.515.
[@] For absolute intensity per 100 decays, multiply by ≤0.00016.

^{184}Au α decay (47.6 s) 1995Bi01 (continued)

$\gamma(^{180}Ir)$

E_γ †	E_i(level)	E_f	E_γ †	E_i(level)	E_f	E_γ †	E_i(level)	E_γ †	E_i(level)	E_f
x50.2#			x89.7‡			x142.6#		x197.9‡		
x55.3@			113.5 *5*	113.5	0	x171.7‡		212.4 *5*	212.4	0
80.4 *5*	80.4	0	x130.4‡			x183.8‡				

† From 1995Bi01. Uncertainty not given, evaluator assumed $\Delta E\gamma$=0.5 keV.
‡ In coincidence with Eα=4980 keV.
# In coincidence with Eα=5024 keV.
@ In coincidence with Eα=5109 keV.
x γ ray not placed in level scheme.

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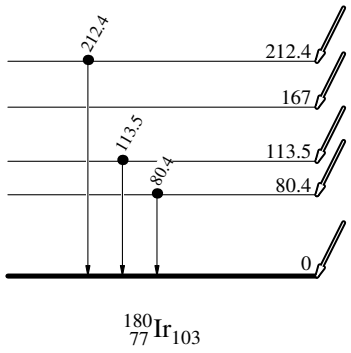
Legend

• Coincidence

Decay Scheme



Eα	Iα	HF
4980	≤0.0017	>10
5024	≤0.0017	>19
5065	≤0.0010	>57
5109	≤0.0075	>12
5187	≤0.0041	>50