

$^{81}\text{Br}({}^3\text{He,t}),({}^3\text{He,t}\gamma)$ 1981Ko24,1988Ch25

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 199,271 (2025)	1-Sep-2024

$J^\pi(\text{target})=3/2^-$.

Also 1982Ko06.

1981Ko24: $E({}^3\text{He})=24.5$ MeV, natural RbBr target, magnetic spectrograph, $\theta(\text{c.m.})\approx 8^\circ-42^\circ$, $\text{FWHM}<25$ keV; measured $\sigma(\theta)$ for IAS. See also 1982Ko06.

1988Ch25: $E({}^3\text{He})=29.8$ MeV, 97.8% ^{81}Br target, magnetic spectrometer with particle identification at 0° , NaI at 125° ; measured spectrum of γ rays coincident with tritons populating IAS at 9717 keV.

 ^{81}Kr Levels

E(level) [†]	J^π	L [#]	Comments
0			
50			
190			
457			
549			
636			
700			
873			
919			
9717 [‡]	15 3/2 ⁻	0	E(level), J^π : isobaric analog of ^{81}Br g.s., based on E, Γ and L=0. Level energy from 1982Ko06, based on ^{51}V - ^{51}Cr mass difference (cf. 9675.32 based on ^{87}Rb - ^{87}Sr mass difference, 1981Ko24).

[†] From 1981Ko24 (Fig. 1). ΔE not stated, but reported levels are within 1 keV of adopted E(level) values deduced from E_γ data.

[‡] Absence of high energy (>1.5 MeV) γ rays coincident with tritons populating this level implies $<10\%$ decay branch via a single high energy γ ray and $<6.4\%$ via two 4.9-MeV γ rays for this IAS; strong 620γ -triton coin indicates presence of n decay from IAS to ^{80}Kr . 1988Ch25 conclude that IAS probably decays by n emission alone.

[#] From DWBA analysis of $\sigma(\theta)$.