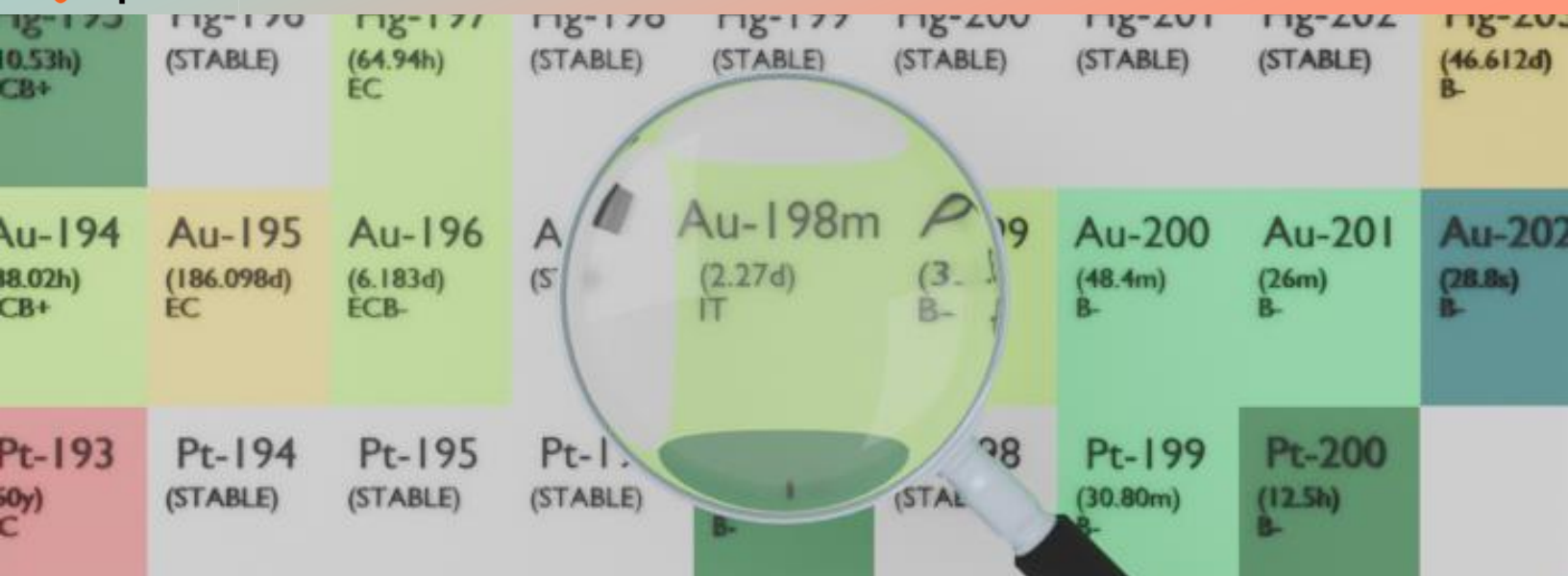




GOLD-198M

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Au-198m

Atomic number (Z): 79

Mass number (A): 198

Neutron number (N): 119

RADIOACTIVE DECAY

Decay modes: Internal transition

Half-life: 2.27 [d]

Decay constant: $3.5342\text{e-}06$ [1/s]

Daughters: Au-198 (100.0%)

Radioactive daughters: Au-198

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]

Mean electron energy: 0.27478 [MeV]

Mean photon energy: 0.53323 [MeV]

Air kerma rate constant, Γ_{10} : $3.008\text{e-}17$ [$\text{Gy} \cdot \text{m}^2/\text{Bq} \cdot \text{s}$]

Air kerma coefficient, K_{air} : $3.008\text{e-}17$ [$\text{Gy} \cdot \text{m}^2/\text{Bq} \cdot \text{s}$]

Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : $4.402\text{e-}14$ [$\text{Gy} \cdot \text{kg}/\text{Bq} \cdot \text{s}$]

Equilibrium dose constant for alphas, Δ_{α} : $0.000\text{e+}00$ [$\text{Gy} \cdot \text{kg}/\text{Bq} \cdot \text{s}$]

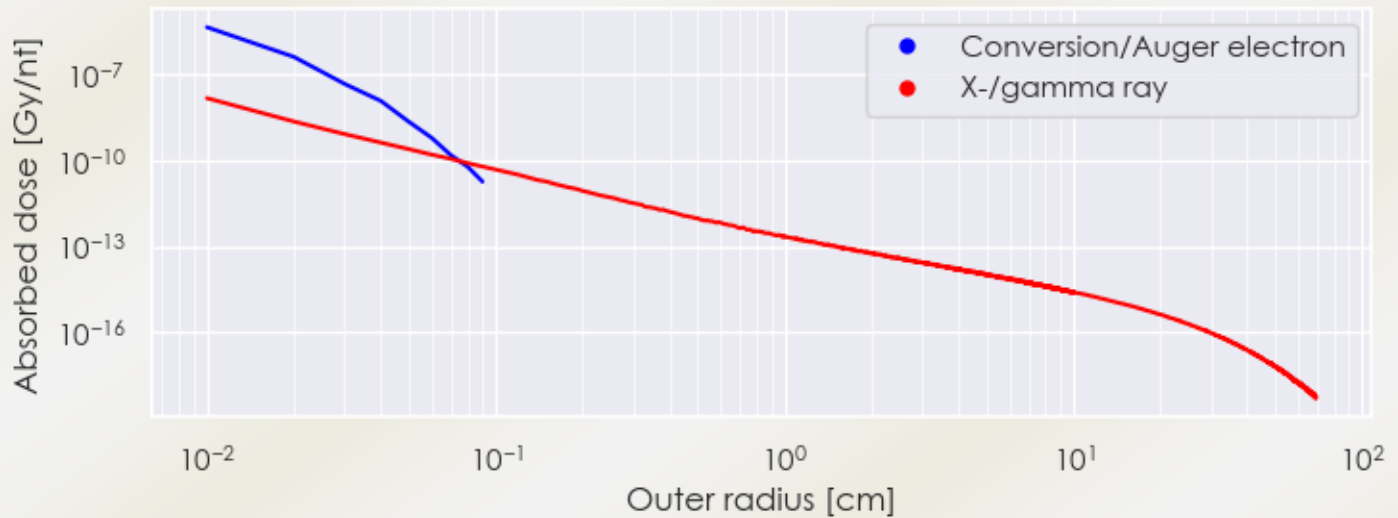
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-, \beta+, e-}$: 4.402e-14 [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 8.543e-14 [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

Dose point kernel source: **Graves, et al. Medical Physics. 2019 Nov.; 46(11):5284-5293.**

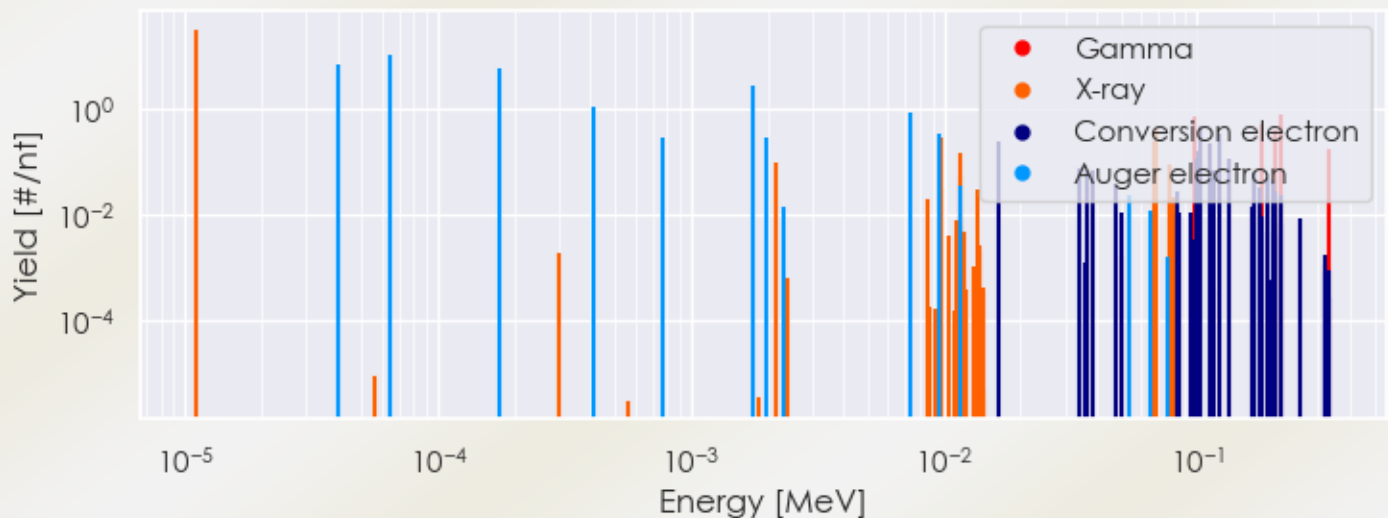
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Au-198m DPK.csv

SUMMARY SPECTRA (PLOT)

Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Au-198m Summary Spectrum.csv

TABULATED DATA

SUMMARY SPECTRA (TABLE)

Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**

Note: Radiations with yield < 0.01 are excluded from the table, but are available in the linked *.csv data.

Download tabulated summary spectra file here: [www.mirdsoft.org/products/MIRDspecs/Au-198m Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Au-198m%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [#/(nt)] if > 0.01	Radiation type
1.10946e-05	3.089e+01	X-ray
2.14405e-03	9.376e-02	X-ray
8.52062e-03	1.925e-02	X-ray
9.62130e-03	3.350e-02	X-ray
9.70979e-03	2.951e-01	X-ray
1.14753e-02	1.498e-01	X-ray
1.15870e-02	5.514e-02	X-ray
1.34225e-02	2.958e-02	X-ray
6.71839e-02	2.476e-01	X-ray
6.90380e-02	4.212e-01	X-ray
7.78158e-02	4.633e-02	X-ray
7.82261e-02	8.965e-02	X-ray
8.03237e-02	1.086e-02	X-ray
8.04227e-02	2.123e-02	X-ray
9.72100e-02	6.930e-01	Gamma
1.80310e-01	5.005e-01	Gamma
2.04100e-01	4.081e-01	Gamma
2.14890e-01	7.700e-01	Gamma
3.33820e-01	1.789e-01	Gamma
4.01427e-05	6.789e+00	Auger electron
6.39638e-05	1.042e+01	Auger electron
1.74149e-04	5.508e+00	Auger electron
4.09146e-04	1.063e+00	Auger electron
7.73841e-04	2.929e-01	Auger electron
1.75321e-03	2.763e+00	Auger electron
1.97379e-03	2.862e-01	Auger electron
2.31249e-03	1.413e-02	Auger electron

7.37954e-03	8.248e-01	Auger electron
9.50221e-03	3.461e-01	Auger electron
1.16501e-02	3.519e-02	Auger electron
1.62500e-02	2.481e-01	Conversion electron
3.42400e-02	7.245e-02	Conversion electron
3.67240e-02	7.025e-02	Conversion electron
3.85780e-02	7.142e-02	Conversion electron
4.77660e-02	3.713e-02	Conversion electron
5.05000e-02	1.089e-02	Conversion electron
5.42437e-02	2.253e-02	Auger electron
6.50992e-02	1.213e-02	Auger electron
8.28740e-02	2.703e-02	Conversion electron
8.34340e-02	1.028e-02	Conversion electron
8.52880e-02	1.072e-02	Conversion electron
9.44760e-02	1.123e-02	Conversion electron
9.93500e-02	1.092e-01	Conversion electron
1.00864e-01	1.639e-01	Conversion electron
1.01424e-01	3.431e-02	Conversion electron
1.03278e-01	4.509e-01	Conversion electron
1.12466e-01	2.144e-01	Conversion electron
1.15200e-01	6.683e-02	Conversion electron
1.23140e-01	3.362e-01	Conversion electron
1.33930e-01	1.094e-01	Conversion electron
1.65974e-01	1.381e-02	Conversion electron
1.66534e-01	6.506e-02	Conversion electron
1.68388e-01	4.316e-02	Conversion electron
1.77576e-01	3.152e-02	Conversion electron
1.89764e-01	5.043e-02	Conversion electron
2.00554e-01	1.415e-02	Conversion electron
2.01114e-01	4.676e-02	Conversion electron
2.01366e-01	1.307e-02	Conversion electron
2.02968e-01	2.868e-02	Conversion electron
2.12156e-01	2.297e-02	Conversion electron

USEFUL LINKS

Isotope decay characteristics are periodically updated as better measurements can be made - changes that may not be reflected on this page. Please see useful links:

National Nuclear Data Center (NNDC): <https://www.nndc.bnl.gov/nudat3/mird/>

International Atomic Energy Agency (IAEA) Livechart: <https://www-nds.iaea.org/relnsd/vcharthtml/VChartHTML.html>

REFERENCE LINKS

ICRP Report 107: <https://www.icrp.org/publication.asp?id=ICRP%20Publication%20107>

Graves et al. Dose Point Kernels: <https://doi.org/10.1002/mp.13789>

MIRD Decay Schemes 2nd Edition: https://sites.snmmi.org/SNMMI-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6