

Cu-67 Specification

Half Life	2.58 days
Decays	Zn-67 stable
Significant emissions	Beta : 580 keV Gamma : 184.6 keV
Form	CuCl ²
Available	Solution 0.01 M HCl
Concentration	300 mCi/mL 11.1 GBq/mL
Specific Activity	> 50 Ci/mg typically >200 Ci/mg; 1.48 - 7.40 TBq/mg
Radionuclidic Purity	>99.9% Cu-67
Calibration date	24 hrs from process end date
Expiry date	10 days post-calibration date
Availability	Weekly
Batch Size	50-200 mCi; 1.85-7.4 GBq Available in larger batches on request
Packaging	1ml conical screw top vial
Research Grade	Not for Human Use

High Specific Activity
& High purity

Cu-67



e-Linac produced
Research Grade Product

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e-Linac Cu-67

Cu-67 is an ideal radionuclide for therapy in oncology. For radiopharmaceutical development it forms the perfect 'theranostic pairing' with Cu-64, used for PET imaging. The gamma emissions of Cu-67 also enable surrogate SPECT imaging over 10 days.

Historically, Cu-67 has been produced on high-energy proton accelerators. Unfortunately, low specific activity, poor availability and co-production of Cu-64 and other radionuclides have limited its widespread use.

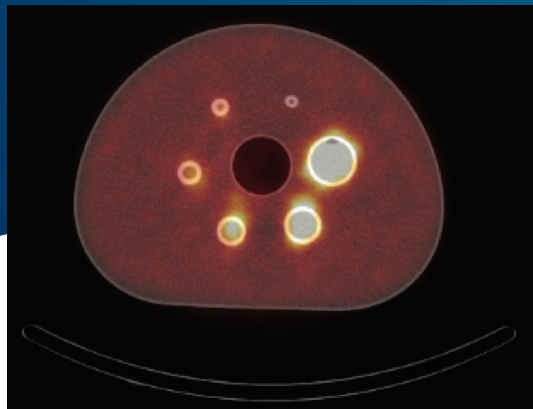
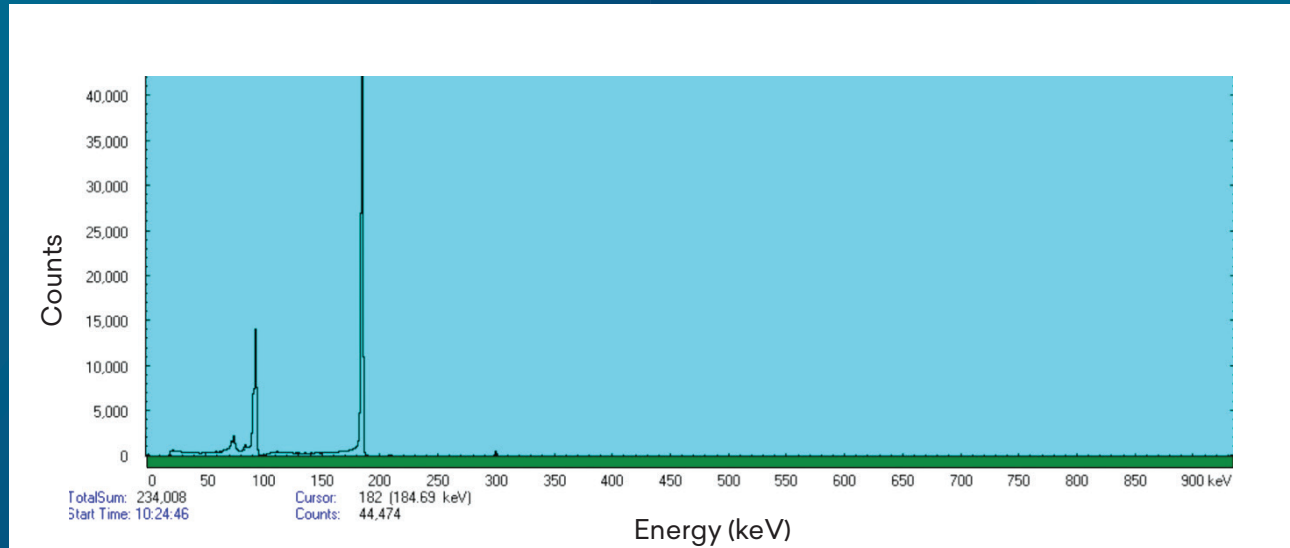


Figure 1: SPECT CT image of Cu-67 phantom (Royal North Shore Hospital, Sydney, Australia)

Today, e-linac production of Cu-67 [using the photonuclear reaction $^{68}\text{Zn}(\gamma, p) ^{67}\text{Cu}$] is cleaner and has a 'game changing' higher specific activity (50 – 100 times greater). than Cu-67 produced via other nuclear reactions and high purity (>99% radionuclidic purity). Expiry times are also longer.

Typical Gamma Spectrum of e-Linac Cu-67



Percentage of e-Linac Cu-67 activity remaining after EOB

		Hours since activation							
		0	3	6	9	12	15	18	21
Days since activation	0	100%	97%	93%	90%	87%	85%	82%	79%
	1	76%	74%	71%	69%	67%	65%	62%	60%
	2	58%	56%	55%	53%	51%	49%	48%	46%
	3	45%	43%	42%	40%	39%	38%	36%	35%
	4	34%	33%	32%	31%	30%	29%	28%	27%
	5	26%	25%	24%	24%	23%	22%	21%	21%
	6	20%	19%	19%	18%	17%	17%	16%	16%
	7	15%	15%	14%	14%	13%	13%	12%	12%
	8	12%	11%	11%	10%	10%	10%	9%	9%
	9	9%	9%	8%	8%	8%	7%	7%	7%