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CERTIFICATE OF ANALYSIS

Thymosin Alpha-1 Batch [redacted] November 2025

Product name	**Thymosin Alpha-1**	Molecular formula	**$C_{129}H_{215}N_{33}O_{55}$**
Batch number	[redacted]	Molecular weight	**3108.32 g/mol**
CAS number	**62304-98-7**	Quantity	**5 mg**
Date of manufacture	**November 2025**	PubChem CID	**16130571**
Storage	**Powder: −20°C 3 years; 4°C 2 years; 15°C 3 months.**	Storage	**In solvent: −80°C 6 months; −20°C 1 month; 10°C 1 week**

Amino acid sequence

Ac-SDAAVDTSSEITTKDLKEKKEVVEEAEN (Thymosin α1)

28 residues

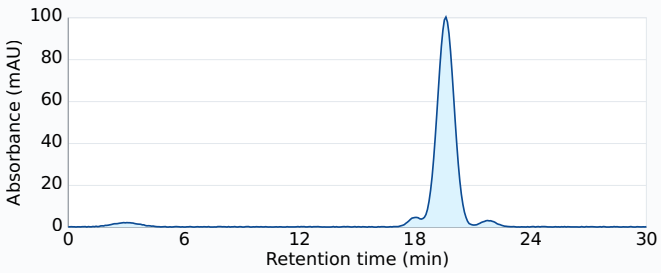
Analytical results

Test parameter	Method	Specification	Result	Status
Appearance	Visual	White to off-white powder	**Conforms**	✓
Peptide purity	RP-HPLC (C18)	≥ 98.5%	**98.82%**	✓
Molecular weight confirmation	ESI-MS	3108.32 ± 1.0 Da	**Conforms**	✓
Water content	Karl Fischer	≤ 10.0%	**4.1%**	✓
Counter-ion content	HPLC	TFA ≤ 0.50% (acetate salt)	**11.4% (acetate)**	✓
Total related substances	RP-HPLC	≤ 2.0%	**1.18%**	✓
Largest single impurity	RP-HPLC	≤ 1.0%	**0.74%**	✓
Residual solvent — Acetonitrile	GC-HS	≤ 410 ppm	**< 410 ppm**	✓
Residual solvent — DCM	GC-HS	≤ 600 ppm	**< 600 ppm**	✓
Residual solvent — DMF	GC-HS	≤ 880 ppm	**< 880 ppm**	✓
Bacterial endotoxins	LAL kinetic turbidimetric	< 5 EU/mg	**< 0.5 EU/mg**	✓
Bioburden	USP <61>	< 100 CFU/g (USP <61>)	**< 10 CFU/g**	✓

HPLC chromatogram

RP-HPLC C18

UV detection at 220 nm — gradient 10–70% ACN in 0.1% TFA over 30 min — flow 1.0 mL/min

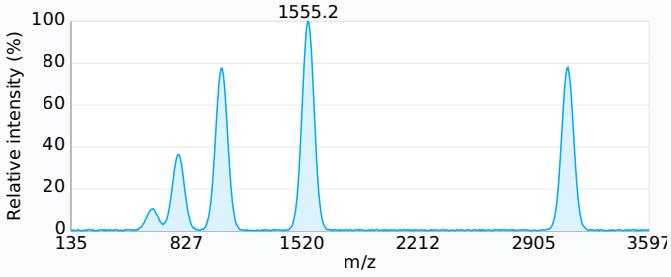


Main peak RT **19.59 min** · Area **98.82%** · Largest imp 0.74% · Total related 1.18%

Mass spectrum

ESI-MS positive

Electrospray ionisation — positive mode



Observed **[M+2H]2+ 1555.2** · MW **3108.32 g/mol**

✓ Overall result: Conforms to specification