



CERTIFICATE OF ANALYSIS

Issued by an ISO/IEC 17025-accredited laboratory · raw data appended (page 2)

PASS

QC released for dispatch



Scan to verify

Thymosin Beta-4 — 10mg

TB4 Fragment

1. PRODUCT IDENTIFICATION

Synonym	TB4 Fragment	Label claim	10mg
Sequence / structure	Ac-SDKPDMAEIEKFDKSKLKKTTETQEKNPSPK ETIEQEKQAGES	Lot / Batch	ZX260512-464 / B83462
Mol. formula	C212H350N56O78S	Manufacture date	27 May 2026
Mol. weight	4963.44 g/mol	Date of analysis	1 Jun 2026
CAS number	77591-33-4	Storage	-20 °C, dark, desiccated
Salt form	Acetate salt		

2. ANALYTICAL TEST RESULTS

Test	Method	Specification	Result	Verdict
Appearance	Visual	White/off-white powder	White to off-white lyophilized powder	PASS
Identity (ESI-MS)	LC-MS	Matches 4963.44 Da	4963.49 Da (Δ 10 ppm)	PASS
Purity	RP-HPLC, UV 220 nm	$\geq 98.0\%$ area	99.33%	PASS
Related substances	RP-HPLC	Single ≤ 1.0 / Total $\leq 2.0\%$	0.37 / 0.67%	PASS
Water content	Karl Fischer (USP <921>)	$\leq 8.0\%$	3.6%	PASS
Counter-ion: acetate	Ion chromatography	Report (3.0–15.0%)	8.0%	PASS
Net peptide content	Amino-acid analysis	$\geq 80.0\%$	87.6%	PASS
Bacterial endotoxin	LAL kinetic (USP <85>)	< 5.0 EU/mg	0.06 EU/mg	PASS
Heavy metals	ICP-MS (ICH Q3D)	Conforms	Conforms	PASS

CONCLUSION

All tested parameters CONFORM to the acceptance specifications. The batch is of high chromatographic purity ($\geq 98\%$) with an impurity profile, identity and residual/contaminant results meeting pharmaceutical-grade quality requirements. Material released. Supporting RP-HPLC chromatogram and ESI-MS spectrum are appended on page 2.

DZK.

Dr. Zhou Kai

Analyst · 1 Jun 2026 · Zhongxi Research Institute

DGT.

Dr. Guo Tao (QC Manager)

Approved by · 1 Jun 2026 · Zhongxi Research Institute



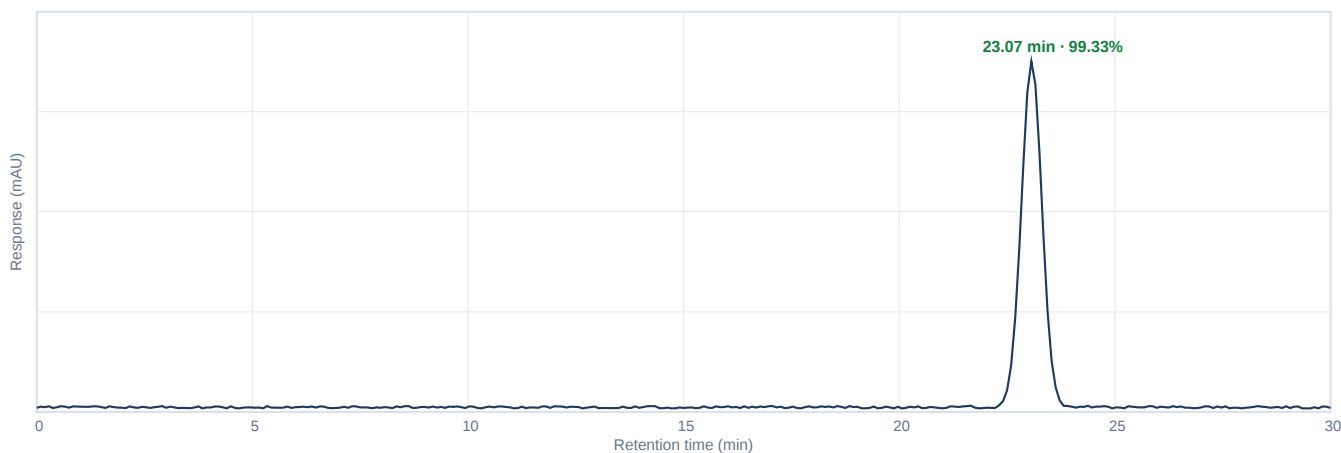
APPENDIX — ANALYTICAL RAW DATA

Thymosin Beta-4 10mg · Lot ZX260512-464 · Cert. ZXR-COA-2026-53124



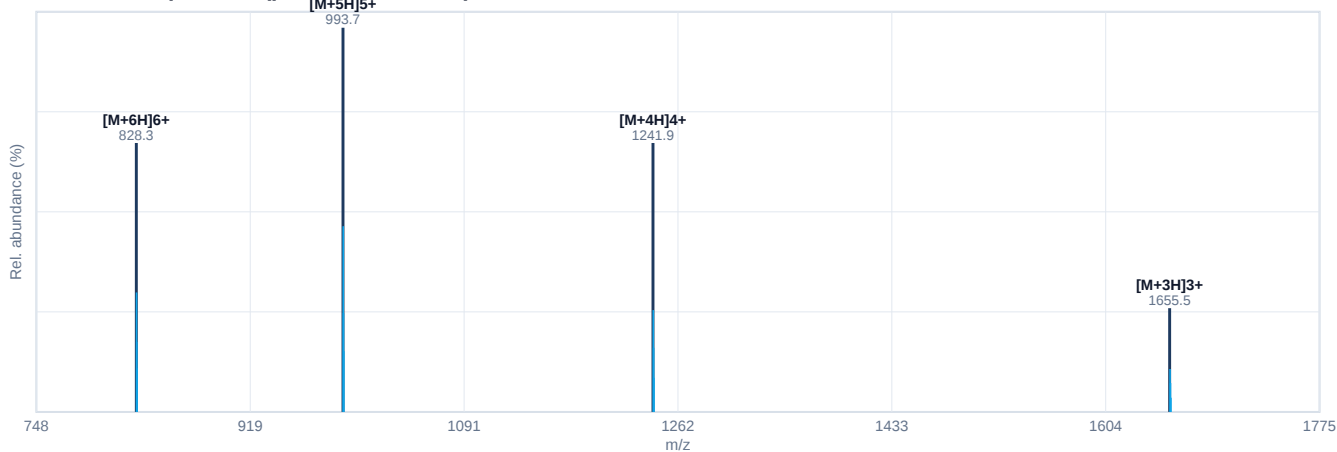
Scan to verify

Figure 1. RP-HPLC Chromatogram (UV 220 nm)



Peak #	RT (min)	Area (μV·s)	Area %	Assignment
1	23.07	956037	99.33	Main (target)
2	16.90	2215	0.22	Impurity / related substance
3	21.57	1671	0.17	Impurity / related substance
4	24.46	1562	0.15	Impurity / related substance
5	18.09	1229	0.13	Impurity / related substance

Figure 2. ESI-MS Spectrum (positive ion mode)



Interpretation

Identity confirmed by ESI-MS. Observed ions [M+3H]³⁺ 1655.5, [M+4H]⁴⁺ 1241.9, [M+5H]⁵⁺ 993.7, [M+6H]⁶⁺ 828.3 deconvolute to a neutral monoisotopic-average mass of 4963.49 Da (theoretical 4963.44 Da; mass error 10 ppm), consistent with Thymosin Beta-4. No co-eluting species above 0.5% indicative of misidentification.

Methods — RP-HPLC: Agilent 1260 Infinity II; Zorbax SB-C18 4.6×250 mm, 5 μm; A: 0.1% TFA in water, B: 0.1% TFA in MeCN; 10–70% B over 30 min; 1.0 mL/min; 25 °C; 20 μL injection. MS: AB Sciex TripleTOF, ESI+, capillary 4.5 kV, deconvolution by Bio Tool Kit. KF: Metrohm 901. IC: Thermo Dionex ICS-6000. ICP-MS: Agilent 7900.