



CERTIFICATE OF ANALYSIS

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

PASS

QC released for dispatch



Scan to verify

VIP (Vasoactive Intestinal Peptide) — 10mg

Vasoactive Intestinal Peptide (VIP, 28aa, C-terminal amide)

1. PRODUCT IDENTIFICATION

Synonym	Vasoactive Intestinal Peptide (VIP, 28aa, C-terminal amide)	Label claim	10mg
Sequence / structure	His-Ser-Asp-Ala-Val-Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Asn-Ser-Ile-Leu-Asn-NH ₂	Lot / Batch	ZX260512-271 / B49187
Mol. formula	C147H237N43O43S	Manufacture date	24 May 2026
Mol. weight	3326.83 g/mol	Date of analysis	29 May 2026
CAS number	37221-79-7	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 3326.83 Da	3326.85 Da (Δ 6 ppm)	PASS
Purity	RP-HPLC, UV 220 nm	$\geq 98.0\%$ area	98.59%	PASS
Related substances	RP-HPLC	Single ≤ 1.0 / Total $\leq 2.0\%$	0.89 / 1.41%	PASS
Water content	Karl Fischer (USP <921>)	$\leq 8.0\%$	2.8%	PASS
Counter-ion: acetate	Ion chromatography	Report (3.0–15.0%)	4.6%	PASS
Net peptide content	Amino-acid analysis	$\geq 80.0\%$	90.6%	PASS
Bacterial endotoxin	LAL kinetic (USP <85>)	< 5.0 EU/mg	0.08 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.

DCJ.

Dr. Chen Jian

Analyst · 29 May 2026 · Zhongxi Research Institute

DLX.

Dr. Lin Xia (QC Manager)

Approved by · 29 May 2026 · Zhongxi Research Institute



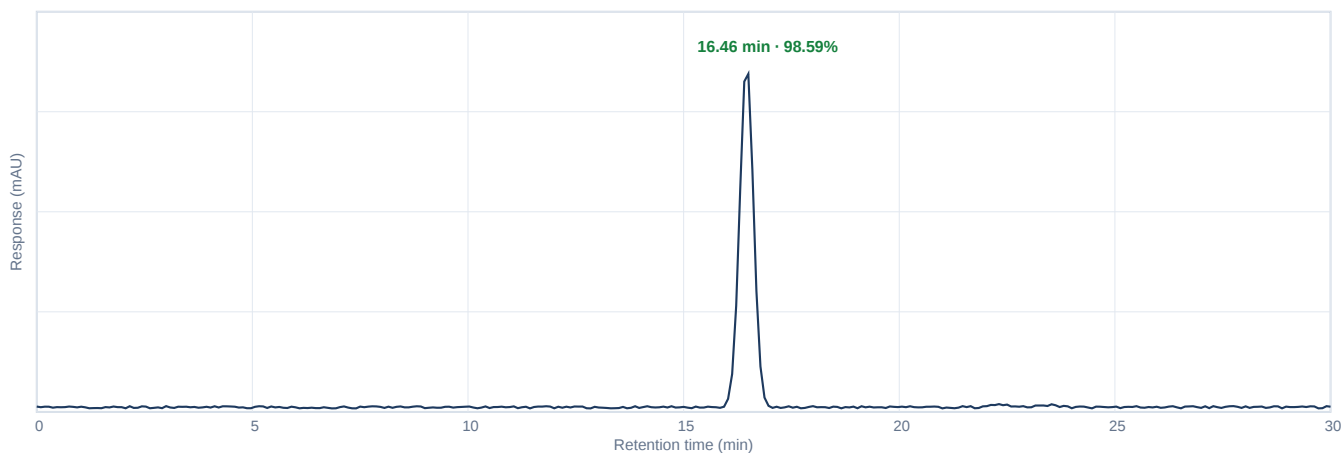
APPENDIX — ANALYTICAL RAW DATA

VIP (Vasoactive Intestinal Peptide) 10mg · Lot ZX260512-271 · Cert. ZXR-COA-2026-82559



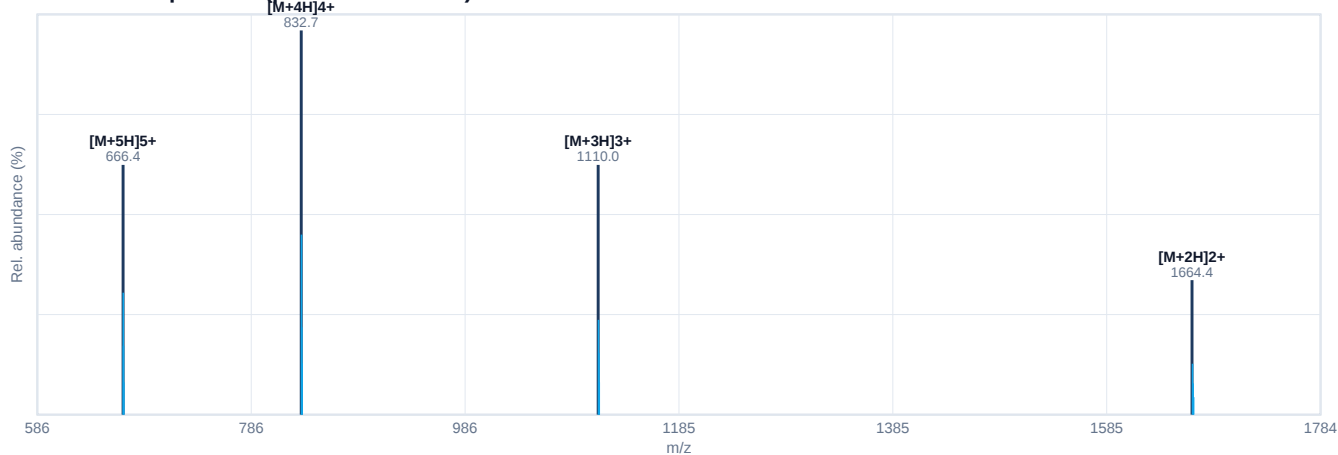
Scan to verify

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



Peak #	RT (min)	Area (μV·s)	Area %	Assignment
1	16.46	1041419	98.59	Main (target)
2	22.33	6630	0.73	Impurity / related substance
3	23.43	6573	0.68	Impurity / related substance

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



Interpretation

Identity confirmed by ESI-MS. Observed ions $[M+2H]^{2+}$ 1664.4, $[M+3H]^{3+}$ 1110.0, $[M+4H]^{4+}$ 832.7, $[M+5H]^{5+}$ 666.4 deconvolute to a neutral monoisotopic-average mass of 3326.85 Da (theoretical 3326.83 Da; mass error 6 ppm), consistent with VIP (Vasoactive Intestinal Peptide). 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.