中析研究所
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# CERTIFICATE OF ANALYSIS

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

**PASS**
QC released for dispatch

Scan to verify

## KPV — 10mg

Alpha-MSH Fragment

### 1. PRODUCT IDENTIFICATION

| | | | |
|---|---|---|---|
| **Synonym** | Alpha-MSH Fragment | **Label claim** | 10mg |
| **Sequence / structure** | Lys-Pro-Val | **Lot / Batch** | ZX260512-350 / B93074 |
| **Mol. formula** | C16H30N4O4 | **Manufacture date** | 28 May 2026 |
| **Mol. weight** | 342.44 g/mol | **Date of analysis** | 31 May 2026 |
| **CAS number** | 67727-97-3 | **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 342.44 Da | 342.44 Da (Δ 0 ppm) | **PASS** |
| **Purity** | RP-HPLC, UV 220 nm | ≥ 98.0% area | 99.71% | **PASS** |
| **Related substances** | RP-HPLC | Single ≤1.0 / Total ≤2.0% | 0.20 / 0.29% | **PASS** |
| **Water content** | Karl Fischer (USP <921>) | ≤ 8.0% | 3.5% | **PASS** |
| **Counter-ion: acetate** | Ion chromatography | Report (3.0–15.0%) | 6.6% | **PASS** |
| **Net peptide content** | Amino-acid analysis | ≥ 80.0% | 88.3% | **PASS** |
| **Bacterial endotoxin** | LAL kinetic (USP <85>) | < 5.0 EU/mg | 0.10 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 (≥ 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.

DHR.

**Dr. Huang Rui**
Analyst · 31 May 2026 · Zhongxi Research Institute

DFH.

**Dr. Fang Hong (QC Manager)**
Approved by · 31 May 2026 · Zhongxi Research Institute

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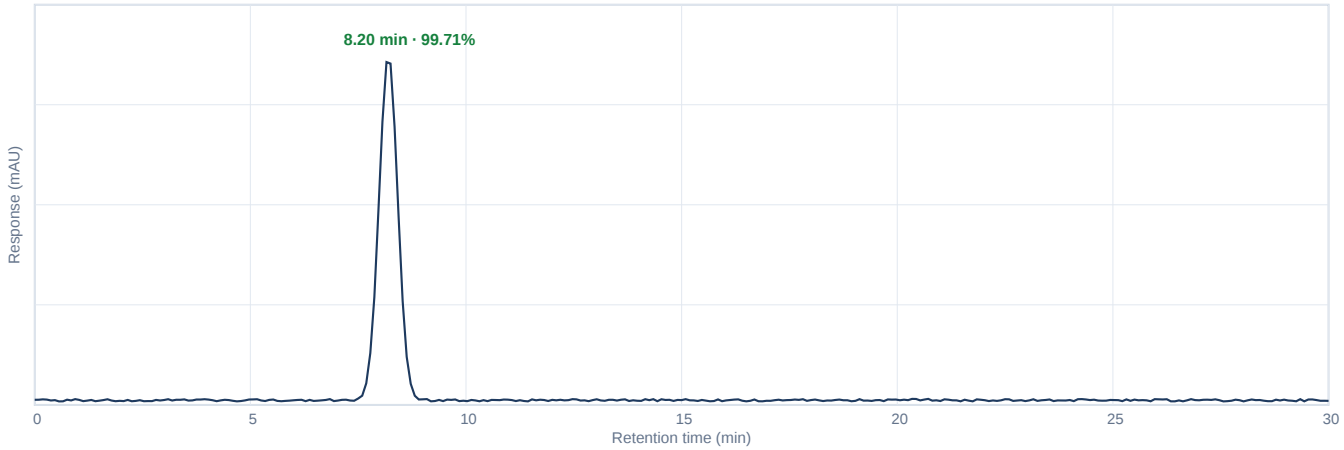
# APPENDIX — ANALYTICAL RAW DATA

KPV 10mg · Lot ZX260512-350 · Cert. ZXR-COA-2026-87411

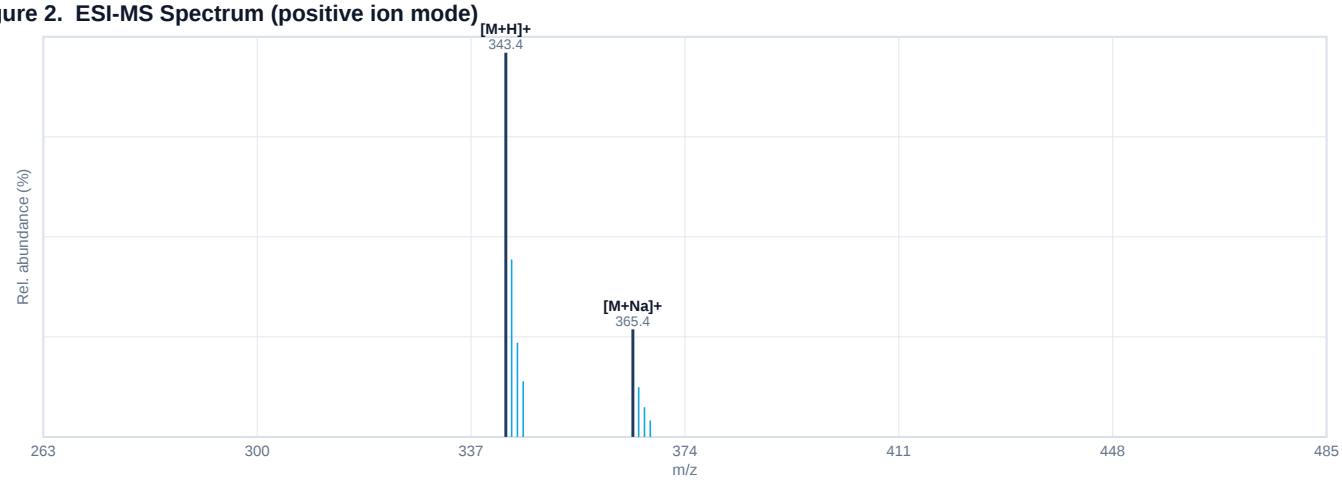
Scan to verify

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




| Peak # | RT (min) | Area (µV·s) | Area % | Assignment |
|---|---|---|---|---|
| **1** | 8.20 | 1094446 | 99.71 | Main (target) |
| **2** | 20.56 | 1391 | 0.13 | Impurity / related substance |
| **3** | 20.13 | 868 | 0.08 | Impurity / related substance |
| **4** | 5.64 | 470 | 0.05 | Impurity / related substance |
| **5** | 15.11 | 318 | 0.03 | Impurity / related substance |

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




**Interpretation**

Identity confirmed by ESI-MS. Observed ions [M+H]+ 343.4, [M+Na]+ 365.4 deconvolute to a neutral monoisotopic-average mass of 342.44 Da (theoretical 342.44 Da; mass error 0 ppm), consistent with KPV. 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.