**PrymaLab**
PRYMALAB ANALYTICAL · IN-HOUSE LABORATORY
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CERTIFICATE NO.
**PL-26-00058**
VERIFICATION KEY
**USDL6YL6**
Scan or enter both at prymalab.net/testing/verify

CERTIFICATE OF ANALYSIS · LOT RELEASE

# KPV 5 mg

Lot **PL-2609-058** · Lyophilized powder · Label claim **5 mg/vial**

**TESTED IN-HOUSE BY PRYMALAB**
In-house analytical result, not an independent third-party test

| LOT / BATCH NUMBER | DATE MADE | DATE OF ANALYSIS | DATE ISSUED |
|---|---|---|---|
| PL-2609-058 | 2026-09-17 | 2026-09-18 | 2026-10-03 |
| **RETEST / EXPIRY** | **UNITS IN LOT / SAMPLED** | **STORAGE** | **CERTIFICATE TYPE** |
| 2028-09-17 | 250 / 2 | −20 °C, desiccated, dark | Lot COA, 2 pages |

| COMPOUND | CAS NUMBER | MOLECULAR FORMULA | THEORETICAL MASS (AVG.) |
|---|---|---|---|
| **KPV**<br>Lys-Pro-Val; α-MSH(11–13) | 67727-97-3 | $C_{16}H_{30}N_4O_4$ | 342.4 Da |

SEQUENCE
`H-KPV-OH (3 residues; free N- and C-termini)`

PURITY · RP-HPLC, AREA %
**99.80%**
Specification 99.0% • main peak at 3.31 min

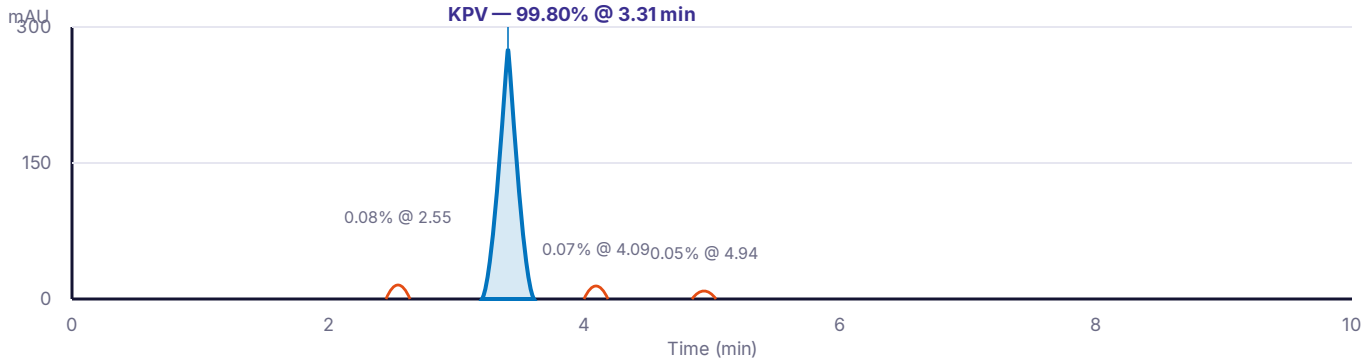
IDENTITY · OBSERVED MASS
**342.6 Da**
Theoretical 342.4 Da • +0.2 Da (584 ppm)

OVERALL CONCLUSION
**PASS**
Meets every specification for the tests performed

| TEST | METHOD | SPECIFICATION | RESULT | CONCLUSION |
|---|---|---|---|---|
| **Appearance** | Visual inspection | White to off-white lyophilized powder | White lyophilized powder | PASS |
| **Identity (mass)** | LC-MS, ESI positive | Theoretical ± 1.0 Da | 342.6 Da | PASS |
| **Purity** | RP-HPLC, UV 214 nm, area% | 99.0% | 99.80% | PASS |
| **Largest impurity** | RP-HPLC, area% | 1.0% | 0.08% at 2.55 min | PASS |
| **Water content** | Karl Fischer | 5.0% | 1.6% | PASS |
| **Bacterial endotoxin** | LAL, kinetic | ≤ 5.0 EU/mg | 0.05 EU/mg | PASS |
| **Sterility / bioburden** | USP <71>, membrane filtration | No growth after 14 days | No growth; conforms | PASS |

## 1 HPLC CHROMATOGRAM

**Data file:** KPV_PL-2609-058_20260918_01 · Column C18 150 × 4.6 mm · UV 214 nm




Baseline uncropped; main peak and impurities labeled with retention times. Peak table on page 2.


**For laboratory research use only.** Not for human or veterinary use.

## 2 HPLC METHOD · KPV_PL-2609-058_20260918_01

| | | |
|---|---|---|
| INSTRUMENT<br>Waters Alliance e2695, SN E2695B742 | DATA SYSTEM<br>Empower 3, Build 3471 | DETECTOR<br>Waters 2998 PDA |
| DETECTION WAVELENGTH<br>214 nm | COLUMN<br>C18, 150 × 4.6 mm, 3.5 µm | COLUMN PART / SERIAL<br>186003326 / USHX18211 |
| MOBILE PHASE A<br>0.1% TFA in water | MOBILE PHASE B<br>0.1% TFA in MeCN | FLOW RATE<br>1.0 mL/min |
| COLUMN TEMPERATURE<br>30 °C | INJECTION VOLUME<br>20 µL | RUN TIME<br>10 min |
| SAMPLE DILUENT<br>Water, 0.1% TFA | SAMPLE CONCENTRATION<br>0.5 mg/mL | BLANK INJECTED<br>Yes |
| REFERENCE STANDARD<br>In-house KPV reference, lot PL-RS-KPV-01, RT 3.29 min | | |

## 3 GRADIENT PROGRAM

| TIME (MIN) | % A | % B |
|---|---|---|
| 0.0 | 95 | 5 |
| 3.0 | 95 | 5 |
| 7.0 | 55 | 45 |
| 8.0 | 20 | 80 |
| 9.0 | 20 | 80 |
| 10.0 | 95 | 5 |

## 4 PEAK TABLE

| PEAK | RT (MIN) | AREA | AREA % |
|---|---|---|---|
| 1 | 2.55 | 3,400 | 0.08 |
| **2** | **3.31** | **4,241,500** | **99.80** |
| 3 | 4.09 | 2,975 | 0.07 |
| 4 | 4.94 | 2,125 | 0.05 |
| Total | | 4,250,000 | 100.00 |

Threshold 0.05% area · Blank subtracted: Y · Purity = main peak area ÷ total integrated area × 100, to two decimals; main peak shaded.

## 5 IDENTITY BY MASS SPECTROMETRY

| | | |
|---|---|---|
| INSTRUMENT<br>Waters Acquity SQD | IONIZATION / MODE<br>ESI, positive | OBSERVED M/Z (CHARGE)<br>343.3 (1+ [M+H]) · 365.3 (1+ [M+Na]) |
| DECONVOLUTED MASS<br>342.6 Da | THEORETICAL MASS<br>342.4 Da | DIFFERENCE<br>+0.2 Da (584 ppm) |
| DATA FILE<br>KPV_PL-2609-058_MS_20260918_01 | ACCEPTANCE<br>Within ± 1.0 Da | |

## 6 ADDITIONAL TESTS

| TEST | PERFORMED BY | DATE | REPORT / FILE |
|---|---|---|---|
| Water content | PrymaLab | 2026-09-19 | RPT-KF-PL-2609-058 |
| Endotoxin | PrymaLab | 2026-09-20 | RPT-ET-PL-2609-058 |
| Sterility | PrymaLab | 2026-10-02 | RPT-ST-PL-2609-058 |

A test with no row here was not performed on this lot. Outside-laboratory reports, when used, are attached and named below.

## 7 REVIEW AND APPROVAL

**D. Reynolds**
Analyst · performed the testing
Date: 2026-09-18

**S. Calloway**
Reviewer · checked against raw data
Date: 2026-10-02

**M. Phelps**
Lab Director · approved for release
Date: 2026-10-03

Raw data retained at: Empower 3 (Build 3471), project PL-2609, archive PL-ARC-2026; 7 years. Outside laboratory reports attached: None

This certificate applies only to the lot named above and describes the units sampled from it; it is not a guarantee for any other lot. Results were obtained by PrymaLab LLC's own laboratory (PrymaLab Analytical) and are not an independent third-party test unless an outside report is attached. Reference values (CAS, formula, theoretical mass, sequence) are literature values for the named compound. Authenticity: scan the QR code or enter certificate number PL-26-00058 and key USDL6YL6 at prymalab.net/testing/verify; any copy that does not match the record shown there is not a PrymaLab certificate. PrymaLab LLC products are supplied for laboratory research use only and not for human or veterinary use.