REDACTED COA COPY

Supplier identifiers removed; analytical data unchanged.

In-house report; not an independent third-party test.

CERTIFICATE NUMBER
PL-26-00059

LOT / BATCH
PL-2609-059

CERTIFICATE OF ANALYSIS · LOT RELEASE

KPV 10 mg

Lot **PL-2609-059** · Lyophilized powder · Label claim **10 mg/vial**

IN-HOUSE ANALYTICAL REPORT

In-house analytical result, not an independent third-party test

LOT / BATCH NUMBER	DATE MADE	DATE OF ANALYSIS	DATE ISSUED
PL-2609-059	2026-09-15	2026-09-16	2026-10-03
RETEST / EXPIRY	**UNITS IN LOT / SAMPLED**	**STORAGE**	**CERTIFICATE TYPE**
2028-09-15	250 / 2	−20 °C, desiccated, dark	Lot COA, 2 pages

COMPOUND	CAS NUMBER	MOLECULAR FORMULA	THEORETICAL MASS (AVG.)
KPV 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 %
99.79%
Specification 99.0% • main peak at 3.31 min

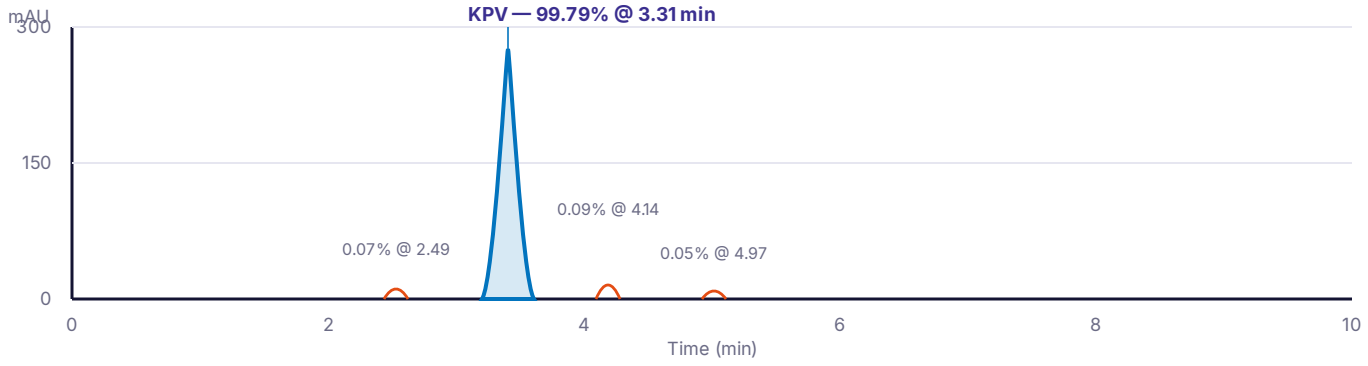
IDENTITY · OBSERVED MASS
342.6 Da
Theoretical 342.4 Da • +0.2 Da (584 ppm)

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%	99.79%	PASS
Largest impurity	RP-HPLC, area%	1.0%	0.09% at 4.14 min	PASS
Water content	Karl Fischer	5.0%	1.7%	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-2609-059_20260916_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-2609-059_20260916_01

INSTRUMENT
Waters Alliance e2695, SN E2695B742

DATA SYSTEM
Empower 3, Build 3471

DETECTOR
Waters 2998 PDA

DETECTION WAVELENGTH
214 nm

COLUMN
C18, 150 × 4.6 mm, 3.5 µm

COLUMN PART / SERIAL
186003326 / USHX18211

MOBILE PHASE A
0.1% TFA in water

MOBILE PHASE B
0.1% TFA in MeCN

FLOW RATE
1.0 mL/min

COLUMN TEMPERATURE
30 °C

INJECTION VOLUME
20 µL

RUN TIME
10 min

SAMPLE DILUENT
Water, 0.1% TFA

SAMPLE CONCENTRATION
0.5 mg/mL

BLANK INJECTED
Yes

REFERENCE STANDARD
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	2.49	2,975	0.07
2	**3.31**	**4,241,075**	**99.79**
3	4.14	3,825	0.09
4	4.97	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
Waters Acquity SQD

IONIZATION / MODE
ESI, positive

OBSERVED M/Z (CHARGE)
343.3 (1+ [M+H]) · 365.3 (1+ [M+Na])

DECONVOLUTED MASS
342.6 Da

THEORETICAL MASS
342.4 Da

DIFFERENCE
+0.2 Da (584 ppm)

DATA FILE
KPV_PL-2609-059_MS_20260916_01

ACCEPTANCE
Within ± 1.0 Da

6 ADDITIONAL TESTS

TEST	PERFORMED BY	DATE	REPORT / FILE
Water content	In-house	2026-09-17	RPT-KF-PL-2609-059
Endotoxin	In-house	2026-09-18	RPT-ET-PL-2609-059
Sterility	In-house	2026-09-30	RPT-ST-PL-2609-059

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: 2026-09-16

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

Redacted copy: supplier name, logo, address, contact details and verification QR/URL have been removed. This certificate applies only to the named lot and sampled units. Results were obtained by the supplier's in-house laboratory and are not independent third-party testing unless an outside report is attached. Reference values (CAS, formula, theoretical mass, sequence) are literature values. For laboratory research use only; not for human or veterinary use.