# Keystone

**FOR LABORATORY RESEARCH USE ONLY.**

keystonecompounds.com

CERTIFICATE NO.
**PL–26–00264**

VERIFICATION KEY
**AVY2MGBV**

Scan or enter both at prymalab.net/testing/verify

**CERTIFICATE OF ANALYSIS · LOT RELEASE · ISSUED FOR KEYSTONE**

## Pinealon 10 mg

Lot **PL-2610-150** · Lyophilized powder · Label claim **10 mg per vial** · Distributed as **Pinealon 10 mg**

**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–2610–150 | 2026-10-06 | 2026-10-07 | 2026-10-21 |
| **RETEST / EXPIRY** | **UNITS IN LOT / SAMPLED** | **STORAGE** | **CERTIFICATE TYPE** |
| 2028-10-06 | 283 / 2 | −20 °C, desiccated, dark | Lot COA, 2 pages |

| COMPOUND | CAS NUMBER | MOLECULAR FORMULA | THEORETICAL MASS (AVG.) |
|---|---|---|---|
| **Pinealon**<br>Glu-Asp-Arg (EDR) | 175175-23-2 | $C_{15}H_{26}N_6O_8$ | 418.40 Da |

**SEQUENCE**
EDR

**PURITY · RP-HPLC, AREA %**
**99.81%**
Specification ≥ 99.0% • main peak at 8.43 min

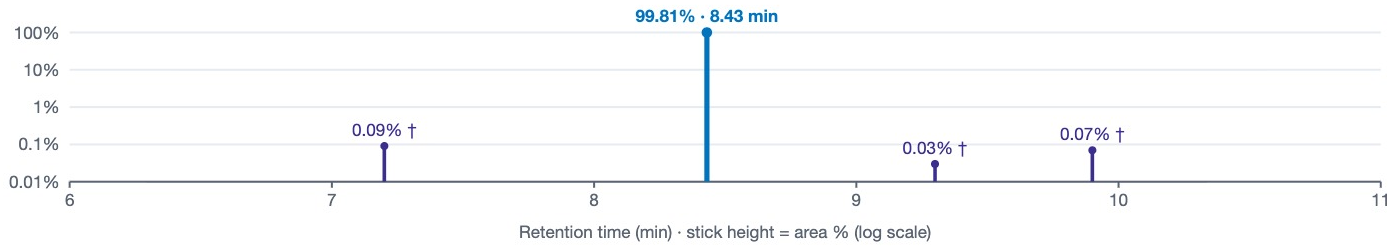
**IDENTITY · OBSERVED MASS**
**418.42 Da**
Theoretical 418.40 Da • +0.02 Da (48 ppm)

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

| TEST | METHOD | SPECIFICATION | RESULT | CONCLUSION |
|---|---|---|---|---|
| **Identity (mass)** | LC-MS, ESI positive | Theoretical ± 1.0 Da | 418.42 Da | **PASS** |
| **Purity** | RP-HPLC, UV 214 nm, area% | ≥ 99.0% | 99.81% | **PASS** |
| **Largest impurity** | RP-HPLC, area% | ≤ 1.0% | 0.09% (RT 7.20) | **PASS** |
| **Water content** | Karl Fischer | ≤ 5.0% | 2.69% | **PASS** |
| **Bacterial endotoxin** | LAL, kinetic | ≤ 5.0 EU/mg | 0.175 EU/mg | **PASS** |
| **Sterility** | USP <71>, 14-day | No growth | No growth | **PASS** |

### 1 HPLC CHROMATOGRAM

**Data file:** PL-2610-150-HPLC.raw · Column C18, 150 × 4.6 mm · UV 214 nm




Peak plot drawn from the integrated peak table (area %, log scale); it is not the instrument trace, which is retained in PL-2610-150-HPLC.raw. † Nominal reference retention time for the assigned impurity; the main-peak RT is observed in this lot.




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

## 2 HPLC METHOD · PL-2610-150-HPLC.RAW

INSTRUMENT
Waters Alliance e2695

DATA SYSTEM
Empower 3

DETECTOR
UV absorbance

DETECTION WAVELENGTH
214 nm

COLUMN
C18, 150 × 4.6 mm, 3.5 µm

MOBILE PHASE A
0.1% TFA in water

MOBILE PHASE B
0.1% TFA in MeCN

GRADIENT
5–95% B over 25 min (linear)

FLOW RATE
1.0 mL/min

COLUMN TEMPERATURE
40 °C

INJECTION VOLUME
10 µL

## 3 GRADIENT PROGRAM

| TIME (MIN) | % A | % B |
|---|---|---|
| 0.0 | 95 | 5 |
| 25.0 | 5 | 95 |

## 4 PEAK TABLE

| PEAK | RT (MIN) | AREA | AREA % |
|---|---|---|---|
| 1 | 7.20 † | — | 0.09 |
| **2** | **8.43** | **—** | **99.81** |
| 3 | 9.30 † | — | 0.03 |
| 4 | 9.90 † | — | 0.07 |
| Total | | — | 100.00 |

Peaks: 1 deamidation product; 2 main peak (Pinealon); 3 isoaspartate (isoasp) variant; 4 truncated sequence · Area % from the integrated peak table (absolute areas are not part of the lot-release export) · † nominal reference RT for the assigned impurity · Purity = main peak area ÷ total integrated area × 100, to two decimals; main peak shaded.

## 5 IDENTITY BY MASS SPECTROMETRY

INSTRUMENT
Waters SQD

IONIZATION / MODE
ESI, positive

REFERENCE M/Z (CHARGE)
419.41 (M+H)+

DECONVOLUTED MASS
418.42 Da

THEORETICAL MASS
418.40 Da

DIFFERENCE
+0.02 Da (48 ppm)

DATA FILE
PL-2610-150-MS.d

ACCEPTANCE
Within ± 1.0 Da

## 6 ADDITIONAL TESTS

| TEST | PERFORMED BY | DATE | REPORT / FILE |
|---|---|---|---|
| Water content (Karl Fischer) | PrymaLab Analytical | 2026-10-07 | — |
| Endotoxin (LAL, kinetic) | PrymaLab Analytical | 2026-10-07 | — |
| Sterility (USP <71>, day-14 read-out) | PrymaLab Analytical | 2026-10-21 | — |

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: 2026-10-21

**S. Calloway**
Reviewer · checked against raw data
Date: 2026-10-21

**M. Phelps**
Lab Director · approved for release
Date: 2026-10-21

Raw data retained at: Empower 3, project PL-2610, 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. This copy is issued for Keystone, a distributor of the lot; the brand shown does not change the laboratory, the method or the results. Reference values (CAS, formula, theoretical mass, sequence) are literature values for the named compound. Authenticity: scan the QR code or enter certificate number PL-26-00264 and key AVY2MGBV 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.