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CERTIFICATE OF ANALYSIS · LOT RELEASE
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CERTIFICATE NO.
PL-26-00106
VERIFICATION KEY
Q7JX4J48
Scan or enter both at prymalab.net/testing/verify

CERTIFICATE OF ANALYSIS · LOT RELEASE · ISSUED FOR PEPDREAM

Thymosin Alpha-1 5 mg

Lot **PL-2609-106** · Lyophilized powder · Label claim **5 mg/vial** · Distributed as **Thymosin Alpha-1**

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-2609-106	2026-09-18	2026-09-19	2026-10-03
RETEST / EXPIRY	**UNITS IN LOT / SAMPLED**	**STORAGE**	**CERTIFICATE TYPE**
2028-09-18	250 / 2	−20 °C, desiccated, dark	Lot COA, 2 pages

COMPOUND	CAS NUMBER	MOLECULAR FORMULA	THEORETICAL MASS (AVG.)
Thymosin Alpha-1 Thymalfasin; Tα1	62304-98-7	$C_{129}H_{215}N_{33}O_{55}$	3108.3 Da

SEQUENCE
Ac–SDAAVDTSSEITTKDLKEKKEVVEEAEN–OH (28 residues; N–acetyl; free C–terminus)

PURITY · RP-HPLC, AREA %
99.82%
Specification 99.0% • main peak at 3.42 min

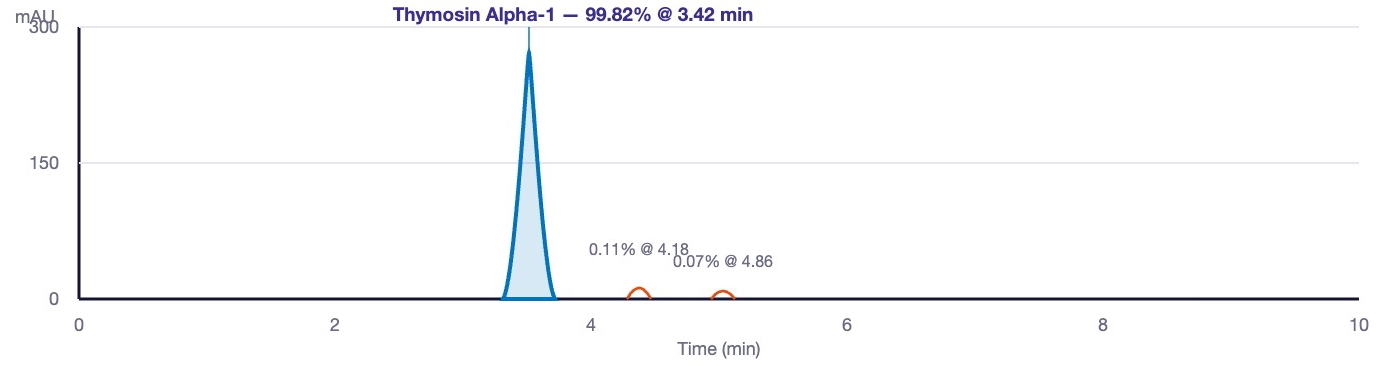
IDENTITY · OBSERVED MASS
3108.5 Da
Theoretical 3108.3 Da • +0.2 Da (64 ppm)

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	3108.5 Da	PASS
Purity	RP-HPLC, UV 214 nm, area%	99.0%	99.82%	PASS
Largest impurity	RP-HPLC, area%	1.0%	0.11% at 4.18 min (des-acetyl species)	PASS
Water content	Karl Fischer	5.0%	1.8%	PASS
Bacterial endotoxin	LAL, kinetic	≤ 5.0 EU/mg	0.04 EU/mg	PASS
Sterility / bioburden	USP <71>, membrane filtration	No growth after 14 days	No growth; conforms	PASS

1 HPLC CHROMATOGRAM

Data file: TA1_PL-2609-106_20260919_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 · TA1_PL-2609-106_20260919_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 Thymosin Alpha-1 reference, lot PL-RS-TA1-01, RT 3.40 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	**3.42**	**4,292,260**	**99.82**
2 (des-acetyl)	4.18	4,730	0.11
3	4.86	3,010	0.07
Total		4,300,000	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)
1037.2 (3+ [M+3H]) · 778.1 (4+ [M+4H])

DECONVOLUTED MASS
3108.5 Da

THEORETICAL MASS
3108.3 Da (N-acetylated 28-mer)

DIFFERENCE
+0.2 Da (64 ppm)

DATA FILE
TA1_PL-2609-106_MS_20260919_01

ACCEPTANCE
Within ± 1.0 Da

6 ADDITIONAL TESTS

TEST	PERFORMED BY	DATE	REPORT / FILE
Water content	PrymaLab	2026-09-20	RPT-KF-PL-2609-106
Endotoxin	PrymaLab	2026-09-21	RPT-ET-PL-2609-106
Sterility	PrymaLab	2026-10-02	RPT-ST-PL-2609-106
Peptide content	PrymaLab	2026-09-20	RPT-AA-PL-2609-106

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: 2026-09-19

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. This copy is issued for pepdream, 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-26-00106 and key Q7JX4J48 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.