PrymaLab
PRYMALAB ANALYTICAL · IN-HOUSE LABORATORY
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CERTIFICATE NO.
PL-26-00019
VERIFICATION KEY
RFVC6Y9F
Scan or enter both at prymalab.net/testing/verify

CERTIFICATE OF ANALYSIS · LOT RELEASE

Cartalax 20 mg

Lot **PL-2609-019** · Lyophilized powder · Label claim **20 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-2609-019	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.)
Cartalax Ala-Glu-Asp (AED; T-31); Khavinson cartilage peptide bioregulator	85806-95-7	$C_{12}H_{19}N_3O_8$	333.3 Da

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

PURITY · RP-HPLC, AREA %
99.51%
Specification 99.0% • main peak at 3.48 min

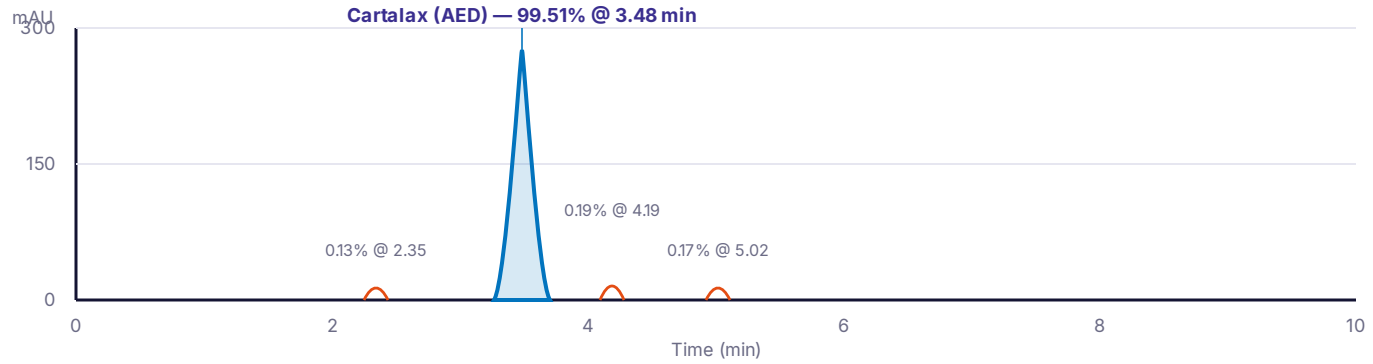
IDENTITY · OBSERVED MASS
333.4 Da
Theoretical 333.3 Da • +0.1 Da (300 ppm)

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	333.4 Da	PASS
Purity	RP-HPLC, UV 214 nm, area%	99.0%	99.51%	PASS
Largest impurity	RP-HPLC, area%	1.0%	0.19% at 4.19 min	PASS
Water content	Karl Fischer	5.0%	2.2%	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: CAR_PL-2609-019_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 · CAR_PL-2609-019_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 Cartalax (AED) reference, lot PL-RS-CAR-01, RT 3.47 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	2.35	5,460	0.13
2	**3.48**	**4,179,420**	**99.51**
3	4.19	7,980	0.19
4	5.02	7,140	0.17
Total		4,200,000	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) 334.1 (1+ [M+H]) · 356.1 (1+ [M+Na])
DECONVOLUTED MASS 333.4 Da	THEORETICAL MASS 333.3 Da	DIFFERENCE +0.1 Da (300 ppm)
DATA FILE CAR_PL-2609-019_MS_20260919_01	ACCEPTANCE Within ± 1.0 Da	

6 ADDITIONAL TESTS

TEST	PERFORMED BY	DATE	REPORT / FILE
Water content	PrymaLab	2026-09-19	RPT-KF-PL-2609-019
Endotoxin	PrymaLab	2026-09-19	RPT-ET-PL-2609-019
Sterility	PrymaLab	2026-09-19	RPT-ST-PL-2609-019

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. Reference values (CAS, formula, theoretical mass, sequence) are literature values for the named compound. Authenticity: scan the QR code or enter certificate number PL-26-00019 and key RFVC6Y9F 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.