Keystone

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CERTIFICATE NO.
PL–26–00246

VERIFICATION KEY
ZVLYE4AR

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

CERTIFICATE OF ANALYSIS · LOT RELEASE · ISSUED FOR KEYSTONE

NAD+ 500 mg

Lot **PL-2610-132** · Lyophilized powder · Label claim **500 mg per vial** · Distributed as **NAD+ 500 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–2610–132	2026-10-05	2026-10-07	2026-10-21

RETEST / EXPIRY	UNITS IN LOT / SAMPLED	STORAGE	CERTIFICATE TYPE
2028-10-05	420 / 2	–20 °C, tightly sealed, dry, dark	Lot COA, 2 pages

COMPOUND	CAS NUMBER	MOLECULAR FORMULA	THEORETICAL MASS (AVG.)
NAD+ β-Nicotinamide adenine dinucleotide, oxidized (free acid); coenzyme, not a peptide	53-84-9	$C_{21}H_{27}N_7O_{14}P_2$	663.43 Da

STRUCTURE

PURITY · RP-HPLC, AREA %
99.60%
Specification ≥ 99.0% • main peak at 6.78 min

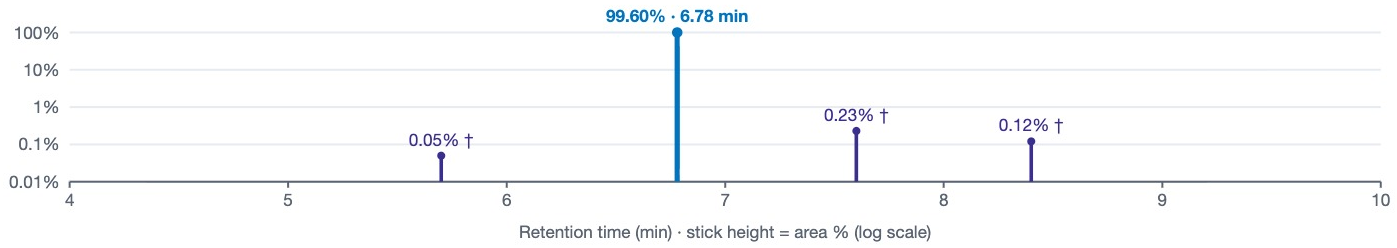
IDENTITY · OBSERVED MASS
663.44 Da
Theoretical 663.43 Da • +0.01 Da (15 ppm)

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	663.44 Da	PASS
Purity	RP-HPLC, UV 254–306 nm, area%	≥ 99.0%	99.60%	PASS
Largest impurity	RP-HPLC, area%	≤ 1.0%	0.23% (RT 7.60)	PASS
Water content	Karl Fischer	≤ 5.0%	2.37%	PASS
Bacterial endotoxin	LAL, kinetic	≤ 5.0 EU/mg	0.182 EU/mg	PASS
Sterility	USP <71>, 14-day	No growth	No growth	PASS

1 HPLC CHROMATOGRAM

Data file: PL-2610-132-HPLC.raw · Column C18, 150 × 4.6 mm · UV 254–306 nm



Peak plot drawn from the integrated peak table (area %, log scale); it is not the instrument trace, which is retained in PL-2610-132-HPLC.raw. † Nominal reference retention time for the assigned impurity; the main-peak RT is observed in this lot.

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2 HPLC METHOD · PL-2610-132-HPLC.RAW

INSTRUMENT Waters Alliance e2695	DATA SYSTEM Empower 3	DETECTOR UV absorbance
DETECTION WAVELENGTH 254–306 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	5.70 †	—	0.05
2	**6.78**	**—**	**99.60**
3	7.60 †	—	0.23
4	8.40 †	—	0.12
Total		—	100.00

Peaks: 1 nadh; 2 main peak (NAD+); 3 adp-ribose; 4 unidentified impurity · 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 (ION) 664.44 [M+H]+
DECONVOLUTED MASS 663.44 Da	THEORETICAL MASS 663.43 Da	DIFFERENCE +0.01 Da (15 ppm)
DATA FILE PL-2610-132-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-26-00246 and key ZVLYE4AR 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.