

CERTIFICATE NO.

PL-26-00067

VERIFICATION KEY

UKZLUHS3

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

CERTIFICATE OF ANALYSIS · LOT RELEASE · ISSUED FOR BLUTIDES

NAD+ 500 mg

Lot PL-2609-067 · Lyophilized powder · Label claim 500 mg/vial · Distributed as NAD+

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-2609-067	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, tightly sealed, dry, dark	Lot COA, 2 pages

COMPOUND	CAS NUMBER	MOLECULAR FORMULA	THEORETICAL MASS (AVG.)
NAD+	53-84-9	C ₂₁ H ₂₇ N ₇ O ₁₄ P ₂	663.4 Da
β-Nicotinamide adenine dinucleotide, oxidized (free acid); coenzyme, not a peptide			
STRUCTURE			
Dinucleotide: adenosine 5'-monophosphate joined through a pyrophosphate bridge to nicotinamide 5'-mononucleotide; oxidized form.			

PURITY · RP-HPLC, AREA %

99.88%

Specification 99.0% • main peak at 2.36 min

IDENTITY · OBSERVED MASS

663.6 Da

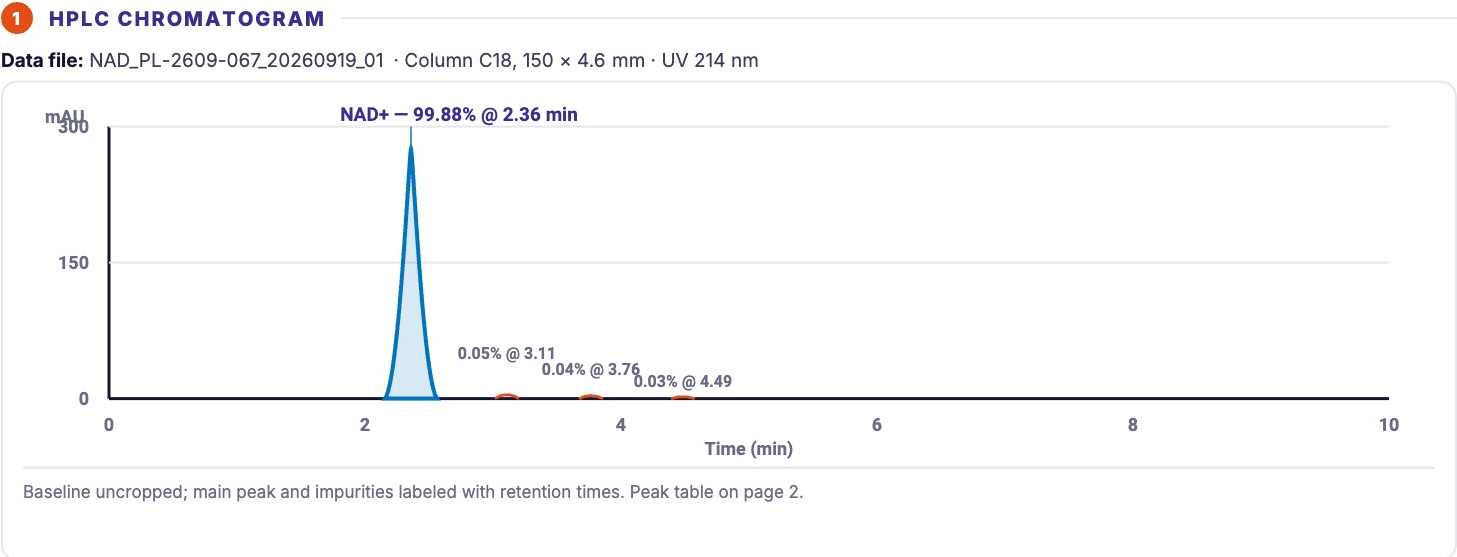
Theoretical 663.4 Da • +0.2 Da (301 ppm)

OVERALL CONCLUSION

PASS

Meets every specification for the tests performed

TEST	METHOD	SPECIFICATION	RESULT	CONCLUSION
Appearance	Visual inspection	White to off-white powder (hygroscopic)	White powder	PASS
Identity (mass)	LC-MS, ESI positive	Theoretical ± 1.0 Da	663.6 Da	PASS
Purity	RP-HPLC, UV 214 nm, area%	99.0%	99.88%	PASS
Largest impurity	RP-HPLC, area%	1.0%	0.05% at 3.11 min	PASS
Water content	Karl Fischer	5.0%	2.6%	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



2 HPLC METHOD · NAD_PL-2609-067_20260919_01

INSTRUMENT	DATA SYSTEM	DETECTOR
Waters Alliance e2695, SN E2695B742	Empower 3, Build 3471	Waters 2998 PDA
DETECTION WAVELENGTH	COLUMN	COLUMN PART / SERIAL
214 nm	C18, 150 × 4.6 mm, 3.5 µm	186003326 / USHX18211
MOBILE PHASE A	MOBILE PHASE B	FLOW RATE
0.1% TFA in water	0.1% TFA in MeCN	1.0 mL/min
COLUMN TEMPERATURE	INJECTION VOLUME	RUN TIME
30 °C	20 µL	10 min
SAMPLE DILUENT	SAMPLE CONCENTRATION	BLANK INJECTED
Water, 0.1% TFA	0.5 mg/mL	Yes
REFERENCE STANDARD		
In-house NAD+ reference, lot PL-RS-NAD-01, RT 2.34 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	2.36	4,294,840	99.88
2	3.11	2,150	0.05
3	3.76	1,720	0.04
4	4.49	1,290	0.03
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	IONIZATION / MODE	OBSERVED M/Z (CHARGE)
Waters Acquity SQD	ESI, positive	664.3 (1+ [M+H]) · 686.3 (1+ [M+Na])
DECONVOLUTED MASS	THEORETICAL MASS	DIFFERENCE
663.6 Da	663.4 Da	+0.2 Da (301 ppm)
DATA FILE	ACCEPTANCE	
NAD_PL-2609-067_MS_20260919_01	Within ± 1.0 Da	

6 ADDITIONAL TESTS

TEST	PERFORMED BY	DATE	REPORT / FILE
Water content	PrymaLab	2026-09-20	RPT-KF-PL-2609-067
Endotoxin	PrymaLab	2026-09-21	RPT-ET-PL-2609-067
Sterility	PrymaLab	2026-10-02	RPT-ST-PL-2609-067

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	S. Calloway	M. Phelps
Analyst · performed the testing	Reviewer · checked against raw data	Lab Director · approved for release
Date: 2026-09-19	Date: 2026-10-02	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 BluTides, 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-26-00067 and key UKZLUHS3 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.