



CERTIFICATE OF ANALYSIS · LOT RELEASE · ISSUED FOR VIRSTELLIS

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 PL-2609-067	DATE MADE 2026-09-18	DATE OF ANALYSIS 2026-09-19	DATE ISSUED 2026-10-03
RETEST / EXPIRY 2028-09-18	UNITS IN LOT / SAMPLED 250 / 2	STORAGE -20 °C, tightly sealed, dry, dark	CERTIFICATE TYPE Lot COA, 2 pages

COMPOUND NAD+ β-Nicotinamide adenine dinucleotide, oxidized (free acid); coenzyme, not a peptide	CAS NUMBER 53-84-9	MOLECULAR FORMULA C₂₁H₂₇N₇O₁₄P₂	THEORETICAL MASS (AVG.) 663.4 Da
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

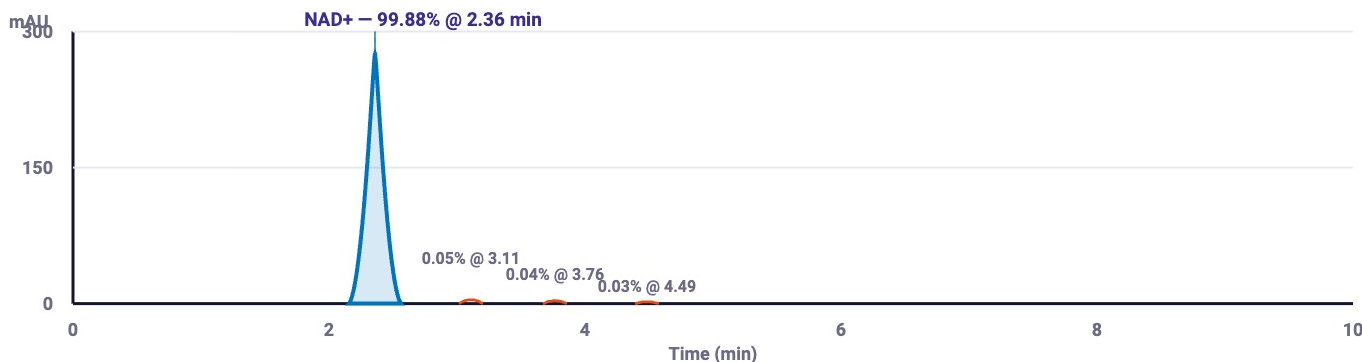
PASS

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

1 HPLC CHROMATOGRAM

Data file: NAD_PL-2609-067_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.

**2 HPLC METHOD · NAD_PL-2609-067_20260919_01**

INSTRUMENT

Waters Alliance e2695, SN E2695B742

DETECTION WAVELENGTH

214 nm

MOBILE PHASE A

0.1% TFA in water

COLUMN TEMPERATURE

30 °C

SAMPLE DILUENT

Water, 0.1% TFA

REFERENCE STANDARD

In-house NAD+ reference, lot PL-RS-NAD-01, RT 2.34 min

DATA SYSTEM

Empower 3, Build 3471

COLUMN

C18, 150 × 4.6 mm, 3.5 µm

MOBILE PHASE B

0.1% TFA in MeCN

INJECTION VOLUME

20 µL

SAMPLE CONCENTRATION

0.5 mg/mL

DETECTOR

Waters 2998 PDA

COLUMN PART / SERIAL

186003326 / USHX18211

FLOW RATE

1.0 mL/min

RUN TIME

10 min

BLANK INJECTED

Yes

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

Waters Acquity SQD

DECONVOLUTED MASS

663.6 Da

DATA FILE

NAD_PL-2609-067_MS_20260919_01

IONIZATION / MODE

ESI, positive

THEORETICAL MASS

663.4 Da

ACCEPTANCE

Within ± 1.0 Da

OBSERVED M/Z (CHARGE)

664.3 (1+ [M+H]) · 686.3 (1+ [M+Na])

DIFFERENCE

+0.2 Da (301 ppm)

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**

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 Virstellis, 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.