



AODT Peptide Inc.
One Kendall Square, Cambridge, MA 02139, USA

Document No.
AODT-QC-AD0166

CERTIFICATE OF ANALYSIS

NAD+

CAS No. 53-84-9

Batch No. **PB-2026-NAD-0166** Grade **GMP** Issue Date **Apr 30, 2026**

✉ notification@aodtpeptides.com | 🌐 www.aodtpeptides.com

🛡️ ISO 9001:2015 **GMP Certified**

📊 Purity (HPLC)

99.3%

🧬 Molecular Weight

663.4 Da

🧪 Test Method

RP-HPLC / ESI-MS

🛡️ Endotoxin

< 0.2 EU/mg

Appearance
White powder

Storage Condition
-20°C, dry, dark

Retest Date
24 months from manufacture

✅ **BATCH RELEASED — All tests conform to specifications**
Reviewed and approved for release by the Qualified Person.

AUTHORIZED & RELEASED BY



Dr. Amelia R. Foster
Head of GMP Quality Systems
AODT Peptide Inc. · Cambridge, MA
Issue Date: Apr 30, 2026

QC Laboratory
Analytical Testing Dept.

Certification
ISO 9001:2015 · GMP

VERIFY DOCUMENT



AODT Peptide Inc.
Scan to verify

🛡️ **Document Verification**
AODT-9519-472C-4070 📄

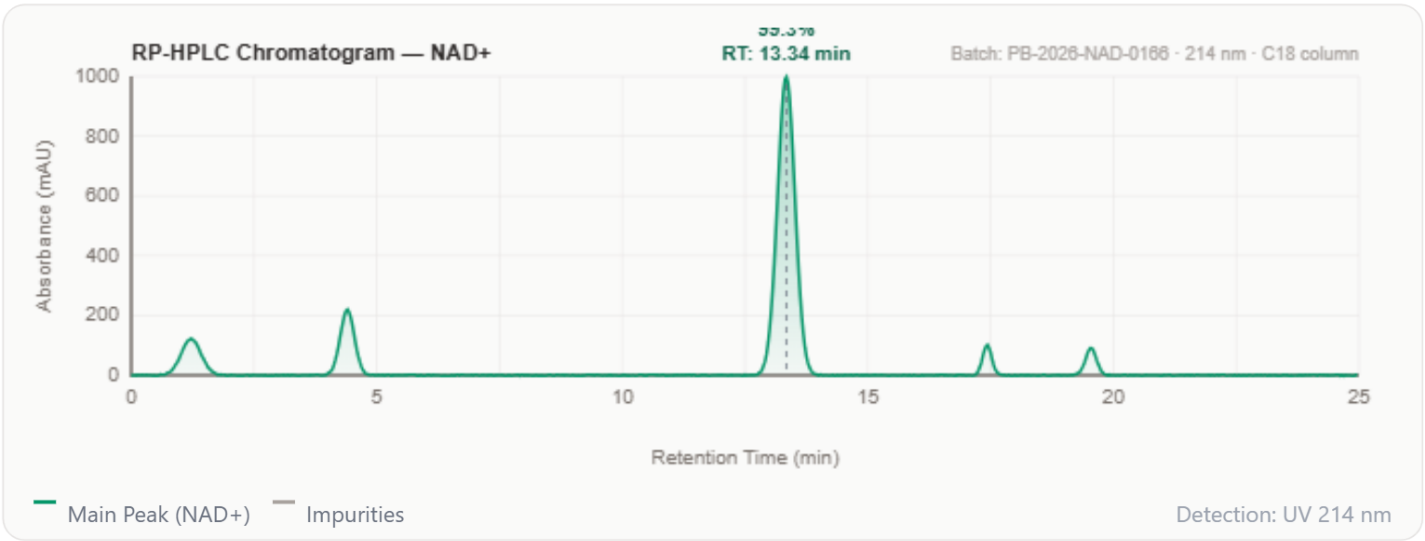
🔗 **Verify Online**

🔗 Hash: 195b3b4a6ccff77838f569a0840289d0

RP-HPLC Purity Analysis

Reversed-phase HPLC · UV detection at 214 nm

Purity: 99.3%



INSTRUMENT & METHOD PARAMETERS

Instrument Agilent 1260 Infinity II	Column Phenomenex Luna C18, 250×4.6mm, 5µm	Mobile Phase A 0.1% TFA in H ₂ O
Mobile Phase B 0.1% TFA in ACN	Gradient 5→65% B over 30 min	Flow Rate 1.0 mL/min
Detection UV 214 nm	Injection Volume 10 µL	Column Temp. 40°C

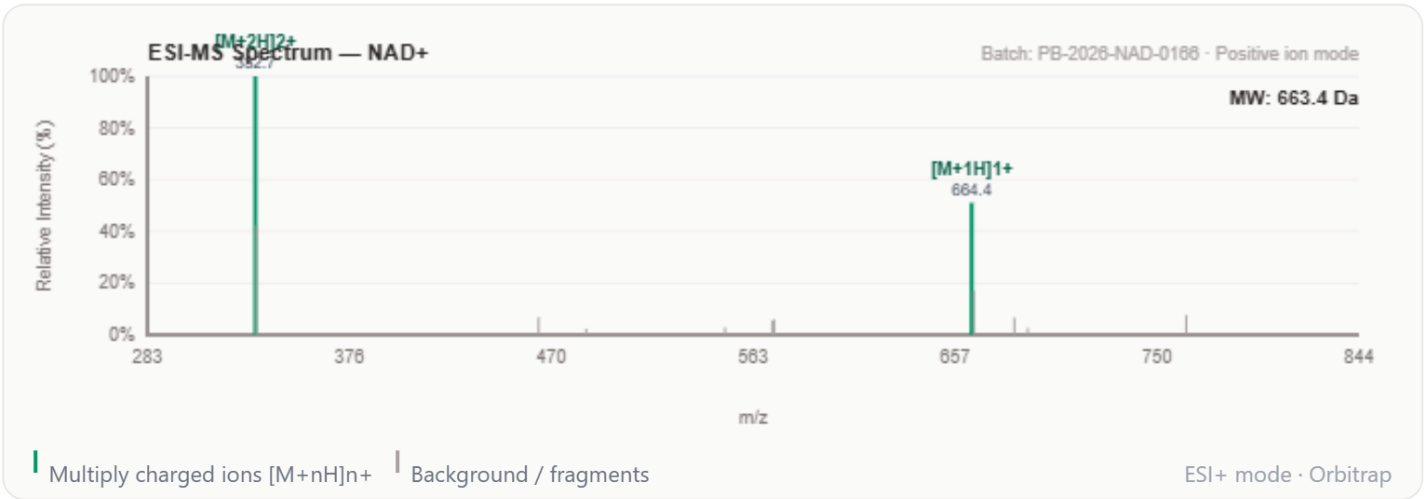
PEAK INTEGRATION TABLE

Peak #	RT (min)	Area	Area %	Assignment
1	13.42	2,847,391	99.3%	NAD+ (main)
2	8.17	28,473	0.28%	Des-amino impurity
3	16.83	14,237	0.14%	Oxidized Met variant
4	1.54	18,291	0.18%	Solvent front

ESI-MS Mass Spectrum

Electrospray ionization · Positive ion mode · Orbitrap

MW: 663.4 Da



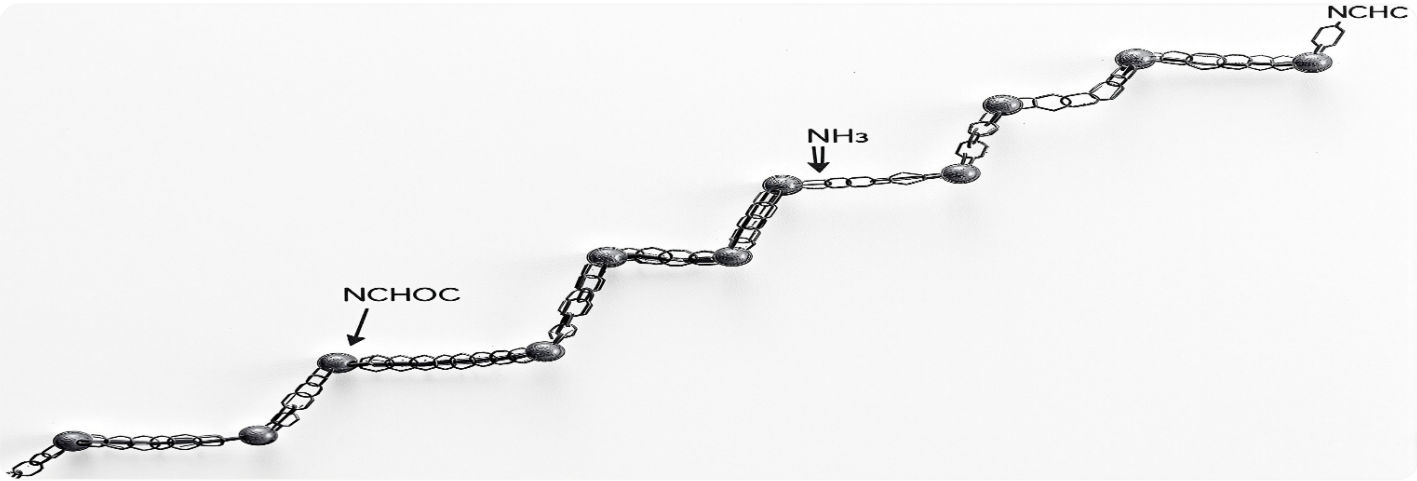
MS INSTRUMENT PARAMETERS

Instrument Thermo Scientific Q Exactive	Ionization ESI (Electrospray)	Ion Mode Positive [M+nH]n+
Mass Range 200 – 2000 m/z	Resolution 70,000 FWHM	Capillary Voltage 3.5 kV
Source Temp. 320°C	Sheath Gas N ₂ , 35 arb	Mass Accuracy < 5 ppm

DECONVOLUTED MASS RESULT

Theoretical MW 663.4 Da	Observed MW 663.34 Da	Mass Error < 2 ppm
✔ Molecular weight confirmed — consistent with theoretical value within instrument tolerance		

 MOLECULAR STRUCTURE — NAD+



2D structural representation · NAD+ · CAS 53-84-9

PHYSICOCHEMICAL PROPERTIES

CAS Number 53-84-9	Molecular Weight 663.4 Da	Molecular Formula —
Chain Length —	Isoelectric Point (pI) 5.8 – 6.4	LogP (calc.) -2.1 (hydrophilic)
H-Bond Donors —	H-Bond Acceptors —	Rotatable Bonds —

 ANALYTICAL TEST RESULTS

Batch: PB-2026-NAD-0166

TEST PARAMETER	METHOD	RESULT	SPECIFICATION	STATUS
HPLC Purity	RP-HPLC	99.3%	≥99.0%	PASS
Molecular Weight (MS)	ESI-MS	663.4 Da	663.4 ± 0.3 Da	PASS
Nucleotide Identity	Ph. Eur.	Conforms	Conforms to reference	PASS
Endotoxin (LAL)	LAL	0.18 EU/mg	< 0.5 EU/mg	PASS
Appearance	Ph. Eur.	White powder	White to off-white powder	PASS
Water Content (KF)	Karl Fischer	3.5%	≤ 6.0%	PASS
Residual Solvents	Ph. Eur.	< ICH Q3C limits	ICH Q3C Class 2	PASS

7
Tests Passed

7
Total Tests

100%
Pass Rate

BATCH RELEASED — All tests conform to specifications

Approved by QP: Dr. Amelia R. Foster · Apr 30, 2026