Analytical Testing Laboratory
7271 Engle Rd Unit 201A, Middleburg Heights, OH 44130
www.sonic-laboratories.com
COA inquiries: info@sonic-laboratories.com
Verify at sonic-laboratories.com/coa-lookup **Code: 277X7WQY**

CERTIFICATE OF ANALYSIS

COA #: **SD20261109_038_NAD500**

SAMPLE INFORMATION

Client	First Standard Peptides	**Accession #**	SD20261109_038
Compound	NAD+	**Date Received**	11/09/2026
Molecular Formula	C21H27N7O14P2	**Date Reported**	11/11/2026
Appearance	White lyophilized powder	**Labeled Quantity**	500mg
Sample Form	Lyophilized Vial	**Lot / Batch #**	NJ500-26-B001
Storage	Room Temp	**CAS Number**	53-84-9
Cap Color	Clear		



All Chemical Analysis Performed by LC-MS/MS

ANALYTICAL RESULTS

Test / Analysis	Method	Specification	Result	Status
Identity (Mass Confirmation)	LC-MS/MS	Matches reference mass	NAD+	**Pass**
Purity	LC-MS/MS	≥ 95.0%	99.68%	**Pass**
Net Peptide Content	HPLC	Report value	514.72 mg	**Pass**
Observed Molecular Mass	LC-MS	Within ± 1.0 Da	664 [M+H]	**Pass**
Theoretical Molecular Mass	Reference	—	663.43 Da	**Pass**
Related Substances / Impurities	LC-MS/MS	Report value	Not Detected	**Pass**
Residual Solvents	LC-MS/MS	Report value	Not Detected	N/A

John Humes, MS.

John Humes, MS.
Analyzed by · Laboratory Analyst · 11/11/2026

Chetan Soni, PhD.

Chetan Soni, PhD.
Approved by · Laboratory Director · 11/18/2026

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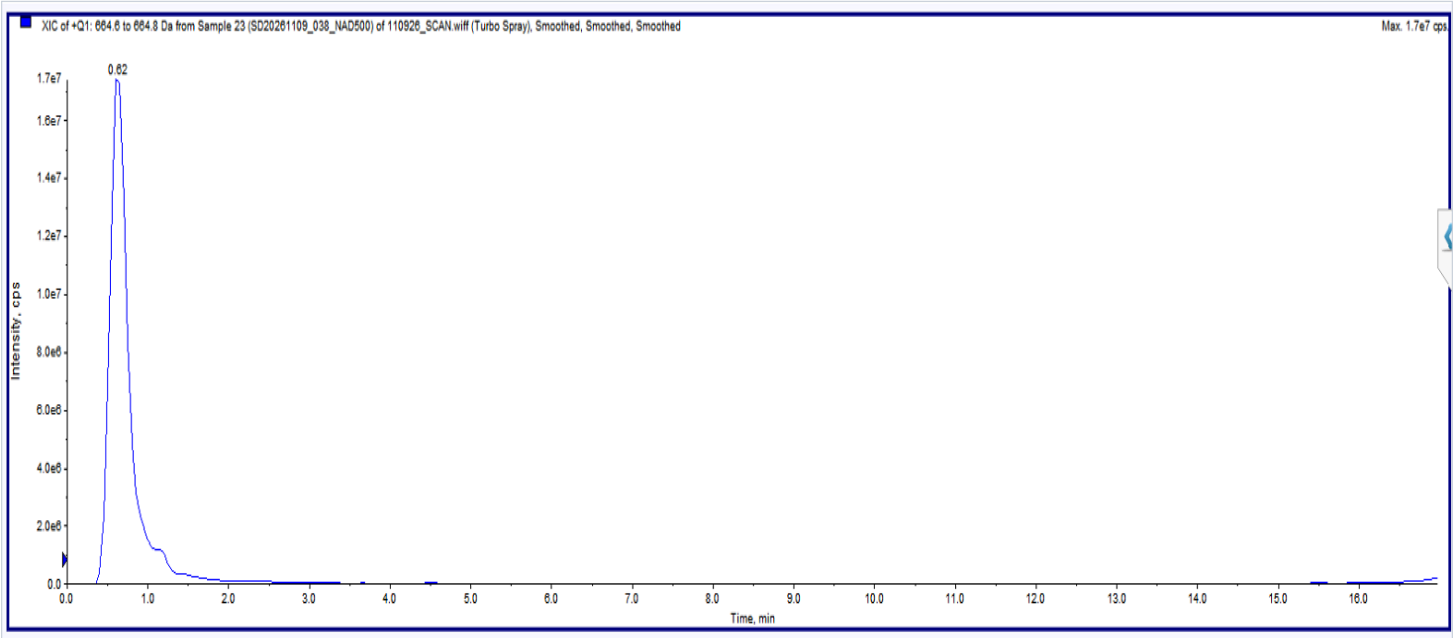
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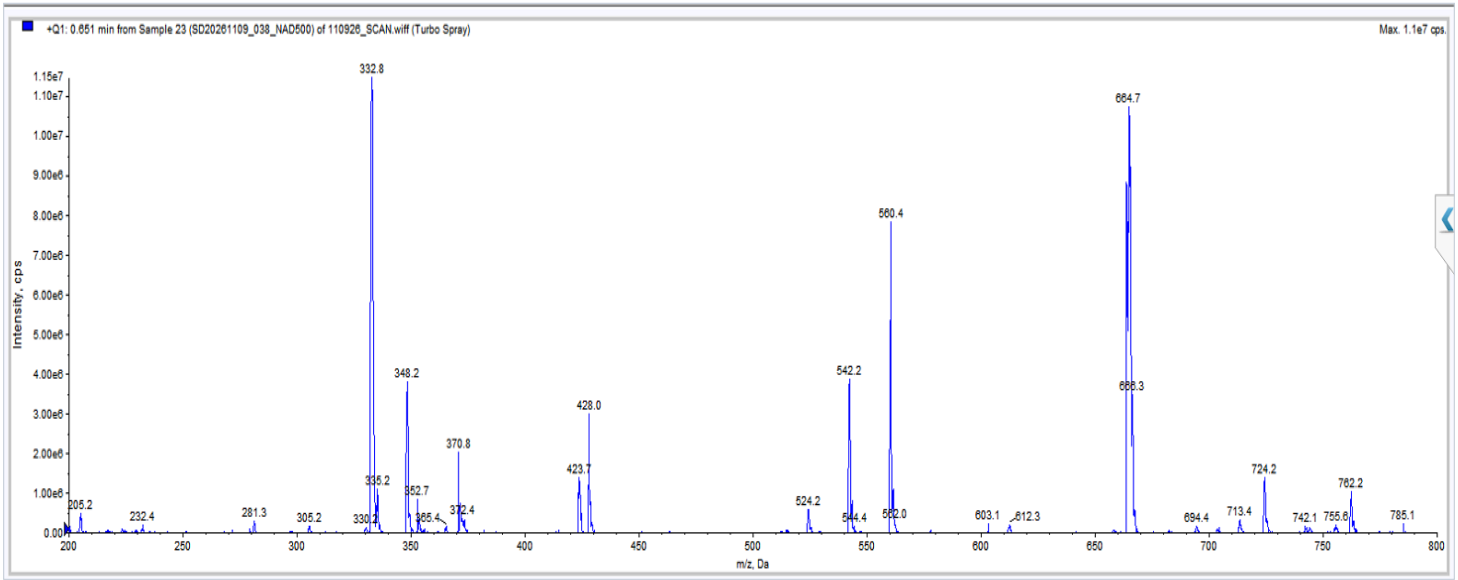
ANALYTICAL DATA

COA #: **SD20261109_038_NAD500**

CHROMATOGRAM



MASS SPECTRUM (LC-MS)



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ANALYTICAL INTERPRETATION

Chromatogram

Retention Time Match for NAD+

Mass Spectrum (LC-MS)

Sample ID: SD20261109_038_NAD500
Label Claim: NAD (Nicotinamide Adenine Dinucleotide)

Observed Ions
m/z 332.8, assigned as $[M+2H]^2$ NAD
m/z 664.7, assigned as NAD molecular ion
m/z 560.4, fragment/adduct species
m/z 542.2, fragment ion
m/z 428.0, fragment ion
m/z 423.7, fragment ion
m/z 724.2, associated ion
Expected Mass

NAD

Molecular Weight: 663.43 Da

Expected ions:

$[M]+ \approx 664.4$
$[M+2H]^2 \approx 332.7$
Deconvoluted Mass Calculations

m/z 664.7

664.7−1=663.7 Da664.7 - 1 = 663.7\ \text{Da}664.7−1=663.7 Da

m/z 332.8 ($[M+2H]^2$)

(332.8×2)−2=663.6 Da(332.8 \times 2)-2 = 663.6\ \text{Da}(332.8×2)−2=663.6 Da
Interpretation

The spectrum contains the characteristic NAD ion pair:

m/z 664.7, assigned as the NAD molecular ion, corresponding to a neutral mass of 663.7 Da
m/z 332.8, assigned as $[M+2H]^2$ NAD, corresponding to a neutral mass of 663.6 Da

Additional observed ions include:

m/z 560.4, fragment/adduct species
m/z 542.2, fragment ion
m/z 428.0, fragment ion

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m/z 423.7, fragment ion
m/z 724.2, associated ion

The spectrum exhibits:

Strong molecular ion at the expected mass
Supporting doubly charged ion at approximately half the molecular mass
Characteristic NAD fragmentation pattern
Clean baseline with minimal interference
No significant ions indicative of an alternate identity
Conclusion

The observed ions at m/z 664.7 and 332.8 are consistent with the expected molecular mass and charge-state distribution of NAD. The deconvoluted masses agree closely with the theoretical molecular weight of nicotinamide adenine dinucleotide.

Result: PASS – Identity Consistent with NAD.

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