GENESIS BIOLABS

255 S Orange Avenue, Suite 104, Orlando, FL 32801
contact@genesisbiolabs.org | www.genesisbiolabs.org

COA # **4271258**

PASS



# Certificate of Analysis

| | | | |
|---|---|---|---|
| Date: | 10/21/2026 | Date Tested: | 10/5/2026 |
| Customer: | Peptides Optimized LLC | Testing material: | NAD |
| Batch #: | NJ500-P06 | BT Sample ID: | 005000869534688 |
| Labeled Peptide Content/Potency: | 500 mg | Storage: | 2–8°C |
| Visual Description: | Amber glass vial: off-white lyophilized powder, Peptides Optimized label, silver crimp, blue flip cap. | | |
| Labeled as: | NAD | Manufacturer: | N/A |
| Testing Purpose: | HPLC and LC-MS analysis for the identification, purity and potency of the compound. It additionally reports elemental impurities (heavy metals), bacterial endotoxins and sterility as recorded in this certificate. | | |




| Test | Method | Specification | Result | Status |
|---|---|---|---|---|
| General Appearance | Visual | White to off-white powder | white powder | PASS |
| HPLC Purity of Compound Assay | USP <621> | NLT 98.0 % (area normalisation) | 99.16 % | PASS |
| HPLC Potency Assay | USP <621> | 90.0 – 110.0 % of labeled content | 500.85 mg (100.2 %) | PASS |
| Identity by Mass Spectrometry | LC-MS (ESI) | Observed mass within 1 Da of theoretical | Conforms | PASS |
| Heavy Metals (Elemental Impurities) | USP <233> (ICP-MS) | Class 1 (Pb, Cd, As, Hg): NMT USP <232>/ICH Q3D limits | Complies (< LOQ) | PASS |

*The results of the CoA relate only to the item(s) tested and applied to the sample as received.*

COA # 4271258 ACCESS CODE **ZD99RSLB6JPB** VERIFY AT www.genesisbiolabs.org/verify

Kenji Sato

**Kenji Sato, AS**
Laboratory Director
Genesis Biolabs
Signed 10/21/2026

Min-Jun Park

**Min-Jun Park, AS**
QA Approver
Genesis Biolabs
Signed 10/21/2026




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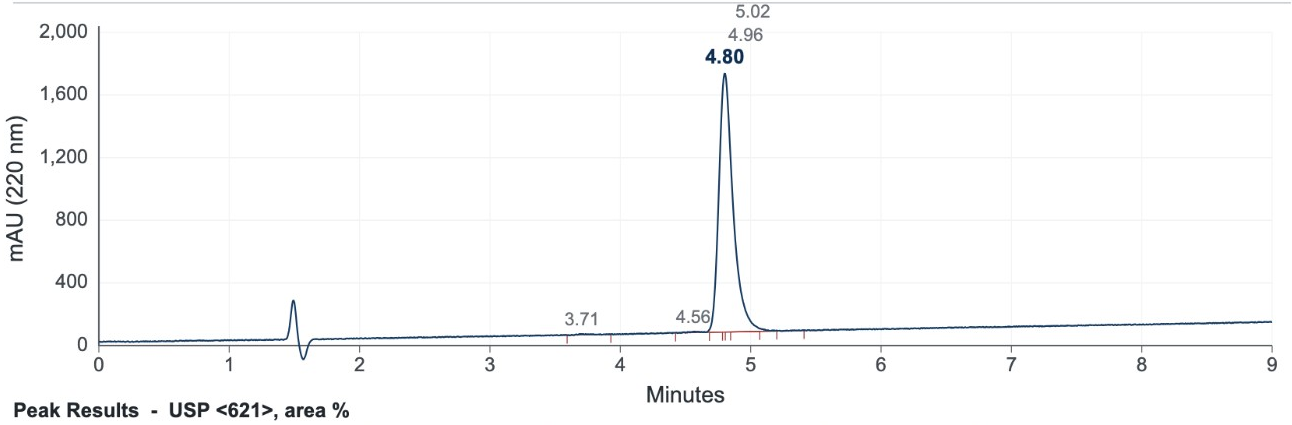
# Certificate of Analysis

**Product:** NAD **Batch #:** NJ500-P06 **Content:** 500 mg **Tested:** 10/5/2026

## HPLC Purity Chromatogram @ 220 nm: NAD Lot NJ500-P06

**Sample Name: NAD 500 mg**
Sample ID / Lot: NJ500-P06
Method: PEP_TFA_220_GRAD.M
Column: Zorbax SB-C18, 4.6 x 150 mm, 5 um
Signal: VWD1 A, 220 nm
Mobile Phase: A 0.1% TFA/H2O, B 0.1% TFA/MeCN (gradient)

Injection Volume: 10.0 uL
Acquired: 10/5/2026 16:44
Vial: 4 Injection: 1
Operator: K. Sato
Flow: 1.0 mL/min Column Temp: 30 C
System: HPLC-04




**Peak Results - USP <621>, area %**

| Pk | RT (min) | Area (mAU*s) | Height (mAU) | Area % | USP Res. | USP Tailing | USP Plates |
|---|---|---|---|---|---|---|---|
| 1 | 3.71 | 31 | 4.4 | 0.24 | - | - | - |
| 2 | 4.56 | 35 | 4.5 | 0.27 | - | - | - |
| **3** | **4.80** | **12,563** | **1,654** | **99.16** | **1.24** | **1.44** | **10,653** |
| 4 | 4.96 | 17 | 2.0 | 0.14 | - | - | - |
| 5 | 5.02 | 24 | 2.1 | 0.19 | - | - | - |
| **Total** | | **12,669** | | **100.00** | | | |

OpenLab CDS | Processing method: USP_PURITY_AREAPCT | Result: main peak 99.2 % (area) | Page 1 of 1



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# Certificate of Analysis

**Product:** NAD **Batch #:** NJ500-P06 **Content:** 500 mg **Tested:** 10/5/2026

## Heavy Metals Analysis (ICP-MS, USP <233>)

| Element | Specification | Result | Status |
|---|---|---|---|
| Arsenic (As) | NMT 1.5 ppm | Not Detected | PASS |
| Cadmium (Cd) | NMT 0.5 ppm | Not Detected | PASS |
| Mercury (Hg) | NMT 1.5 ppm | Not Detected | PASS |
| Lead (Pb) | NMT 1 ppm | Not Detected | PASS |
| Chromium (Cr) | NMT 10 ppm | Not Detected | PASS |

Elemental impurities determined by ICP-MS. Limits are laboratory screening limits for research-use material, derived from ICH Q3D permitted daily exposures for the parenteral route.

| Test | Method | Specification | Result | Status |
|---|---|---|---|---|
| Bacterial Endotoxins Test | USP <85> | NMT 40 EU/vial reconstituted | PASS | PASS |

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## Bacterial Endotoxins Test NAD Lot NJ500-P06

| Sample ID | Description | Volume (mL) | Endotoxin Limit (EU/vial) | Lysate Sensitivity (λ, EU/mL) | Result |
|---|---|---|---|---|---|
| NJ500-P06 | NAD | 3 | 40 EU/vial | 0.25 | 0.09 EU/vial |

The sample passed a valid gel clot endotoxin test based on the type, mode of administration and dosage.

## Sterility Test

| Test | Method | Specification | Result | Status |
|---|---|---|---|---|
| Sterility | USP <71> (membrane filtration) | No microbial growth | PASS | PASS |

| Medium | Incubation Temp. | Duration | Units Tested | Observation |
|---|---|---|---|---|
| Fluid Thioglycollate Medium (FTM) | 30 – 35 °C | 14 days | 2 | No growth |
| Soybean–Casein Digest Medium (SCDM) | 20 – 25 °C | 14 days | 2 | No growth |

No microbial growth was observed. The sample meets the requirements of the sterility test (USP <71>).



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# Certificate of Analysis

**Product:** NAD **Batch #:** NJ500-P06 **Content:** 500 mg **Tested:** 10/5/2026

## Notes & Methodology

1. Peptide purity determined by RP-HPLC area normalisation at 220 nm. The value represents the percentage of the target peptide relative to all peptide-related peaks. Non-peptide process-related impurities, where detected, are excluded from the calculation.
2. Net peptide content (potency) calculated as assay content corrected for water (Karl Fischer) and counterion content, expressed as a percentage of the labelled claim.
3. Identity confirmed by FTIR against a reference standard (USP <197A>) and by chromatographic retention time comparison.
4. Elemental impurities screened by ICP-MS per USP <233> methodology. Acceptance criteria are laboratory screening limits for research-use material and do not constitute evaluation against a specific pharmacopoeial monograph.
5. Bacterial endotoxins determined by gel-clot method per USP <85>. Sterility per USP <71>.
6. The chromatogram reproduced in this certificate is representative of the batch tested.



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