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Quantitative Analysis of Nicotinamide Adenine Dinucleotide (NAD+) Consumer Products

March 2025

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Executive Summary

Twenty-one of the most popular Nicotinamide Adenine Dinucleotide (NAD+) containing consumer products from Amazon were tested for NAD+ potency.

- 5 products had NAD+ content at or above the label claim (≥100% label claim).
- 4 products had NAD+ content well below the label claim (1-89% of label claim).
- 12 products had NAD+ content below the method reporting limit or detection limit (less than 1% of the claimed NAD+ was present or NAD+ was not detected at all).

This analysis highlights the overall poor quality of NAD+ products available on the Amazon marketplace. Findings indicate that 57% of the most popular NAD+ products on the marketplace contain little to no actual NAD+, and only 24% are truthfully stating the NAD+ content of their product.

Introduction

Nicotinamide adenine dinucleotide (NAD+) is a critical coenzyme that helps drive metabolism and repair processes in all living cells. Because NAD+ has been shown to decline with age and due to external stressors, such as sun exposure, environmental factors, sedentary lifestyle, and high fat diet, NAD+ is a popular dietary supplement for those consumers seeking to counter the negative effects of aging.

Although a common misconception, supplementing with oral or intravenous NAD+ itself is not the most efficient and effective way to elevate cell and tissue NAD+ levels. As a large, phosphorylated molecule, NAD+ cannot pass through cell membranes and must first be broken down into other NAD+ precursors. Oral and intravenous NAD+ supplementation is virtually untested in humans; thus risks, safety, and efficacy are unknown.

Despite this, NAD+ supplements are readily found for sale in multiple formats including capsules, softgels, liquids, and liposomal delivery with claimed dosages as high as 1800 mg of NAD+ per serving.

However, disparities in quality practices and regulatory enforcement across the industry result in significant variability in product quality. It can be challenging to assess a product's quality based solely on its packaging or online presence, as proper laboratory analysis is needed to confirm the potency of the product. To gain insight into the landscape of NAD+ products available to consumers, Niagen Bioscience, Inc. conducted an analysis of twenty-one of the top-selling NAD+ dietary supplement products on the Amazon marketplace.

NAD+ Consumer Product Testing Results

Between August 2024 and February 2025, twenty-one of the highest selling consumer products labeled as containing NAD+ were purchased from Amazon and analyzed for NAD+ content using a validated High Performance Liquid Chromatography (HPLC) method with a UV-Vis detector.

The results showed a wide range of discrepancies between the measured NAD+ content and the amount claimed on the labels (**Table 1 & Figure 1**).

- 24% of products tested (5 of 21 products) met or exceeded the NAD+ label claim.
- 19% (4 products) having NAD+ content well below the label claim (1-89% of label claim).
- 57% (12 products) having less than 1% of label claim NAD+ present. Eleven of these products have no detectable levels of NAD+.

All nine softgel products tested showed no detectable levels of NAD+. In contrast, the single liquid product tested contained 86% of the labeled amount. These findings for softgels and liquids are expected, given NAD+'s instability in water. Capsules proved to be a more reliable product format, with five products meeting their label claims. However, three capsule products contained less than 1% of the

stated NAD+ content. In addition, all products with a label claim higher than 500 mg failed to meet label claim.

Eleven of the twenty-one products tested were marketed as liposomal. Of these, eight softgel products contained no detectable NAD+. While two capsule products marketed as liposomal did contain NAD+, liposomal claims of enhanced bioavailability are misleading. These formulations simply include sunflower oil or sunflower lecithin ingredients—components of liposomes—but not actual liposomal structures. The presence of a small amount of these ingredients does not necessarily improve bioavailability in the way true liposomal delivery does. Genuine liposomes require a liquid environment to maintain the integrity of their phospholipid bilayer structure. Therefore, dried powdered material, typical of capsule products does not provide intact liposomes and thus cannot deliver the promise of enhanced bioavailability. These products are inherently misleading.

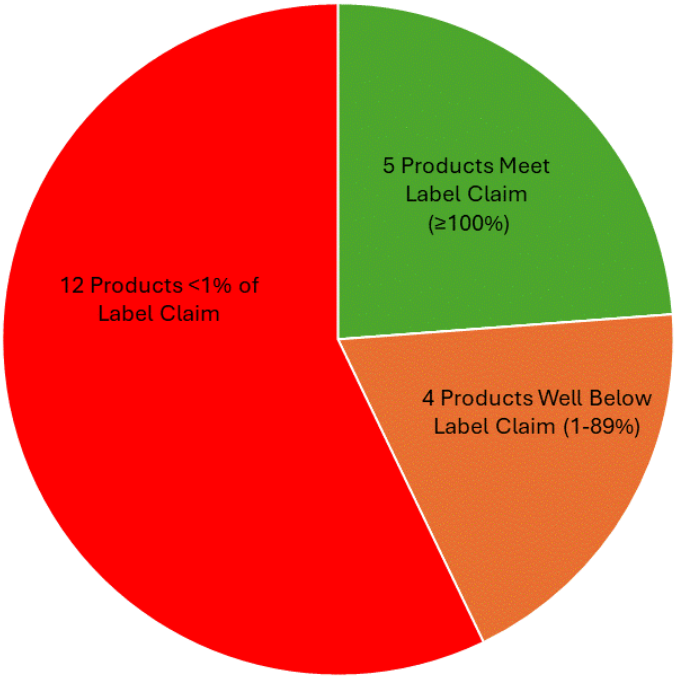

Figure 1: Results from quantitative analysis of twenty-one commercial NAD+ products

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Table 1. Analytical Results for Nicotinamide Adenine Dinucleotide Consumer Products

Key

- Red: <1% of label claim
- Orange: Well below label claim (1-89% of label claim)
- Green: Over label claim (≥100% of label claim)

Brand	Product Name	Product Format	Product Label Claim (mg NAD+/serving)	Result (mg NAD+/serving)
AGLVIA	Liposomal NAD+	Softgel	1800	ND
Cata-Kor*	NAD+ Advanced 500mg Liposomal	Capsule	500	327
Codeage	Liposomal NAD++ Ultra Centurion	Capsule	500	593
Corllia	Liposomal NAD+	Softgel	500	ND
Double Wood	NAD+	Capsule	500	587
Fabamax	Liposomal NAD+ 1600mg	Softgel	1600	ND
Genex	NAD+	Capsule	250	315
Laevigo	Liposomal NAD+ 1200mg	Softgel	1200	ND
Ligusteri	Liposomal NAD+	Softgel	1000	ND
Maripolio	Liposomal NAD+ 1000mg	Softgel	1000	ND
NatureBell	NAD+ resveratrol + hyaluronic acid 1500 mg	Capsule	350	386
Orgabay	Liposomal NAD+	Softgel	500	ND
Resurrected Health	Boosts NAD+ by 63%	Capsule	500	ND
Rhamoph	Liposomal NAD+ & Trans-Resveratrol 800mg	Softgel	500	ND
Rho Nutrition	Liposomal NAD+	Liquid	100	86
Solodate Lab	NAD+ Resveratrol	Capsule	500	ND
Toniiq	NAD+ 1500	Capsule	500	633
Totaria Health	Urolithin A, NAD+, CoQ10, Resveratrol, PQQ	Softgel	200	ND
Vinatura	NAD+ 1000mg	Capsule	1000	59
Viva Victor Quest	NAD+ Resveratrol	Capsule	500	BRL
Wellness Labs RX	Resveratrol NAD+ 1500mg	Capsule	1200	52

BRL – Below Reporting Limit; ND – Not Detected
Reporting Limit – 1% or less of label claim.
* Cata-Kor is a trademark of Reus Research, LLC. In a previously published Market Surveillance report on nicotinamide riboside (NR) consumer products, multiple Reus Research NR products also failed to meet label claim.[1]

Conclusions

Laboratory analysis of commercially available NAD+ dietary supplements revealed widespread inconsistencies in quality and potency. While some supplements met their label claims, over 75% fell short—especially those marketed as softgels, liposomal formulations, or higher-dose options. These results highlight the urgent need for greater transparency and regulatory enforcement in the NAD+ supplement industry to prevent this widespread misbranding from further damaging consumer trust.

Even among the few NAD+ products that met their label claims, the consumer benefits of taking NAD+ supplements are limited. NAD+ is a large molecule (a dinucleotide) that cannot enter cells when introduced into the bloodstream via oral supplements, intravenous (IV) infusions, or injections.[2] NAD+ itself is not bioavailable, it must first break down into precursors like nicotinamide riboside (NR) before entering cells and increasing NAD+ levels. In fact, with NAD+ IV, studies suggest that intact NAD+ causes an acute immune inflammatory response, which may be responsible for the uncomfortable side effects associated with NAD+ IV and injection. Even in a powdered liposomal format where NAD+ may remain stable, NAD+ bioavailability and effectiveness would not substantially improve.

Oral and intravenous NAD+ supplementation is virtually untested in humans thus risks, safety, and efficacy are unknown.

References

1) "Quantitative Analysis of Nicotinamide Riboside Consumer Products and Counterfeit Tru Niagen® (February 2025)". https://investors.niagenbioscience.com/investor-resources/Market-Surveillance/default.aspx. Accessed 24Mar2025.

2) Nikiforov, Andrey et al. "Pathways and Subcellular Compartmentation of NAD Biosynthesis in Human Cells". *Journal of Biological Chemistry* 2011, Volume 286, Issue 24, 21767 – 21778; https://doi.org/10.1074/jbc.M110.213298