



## CERTIFICATE OF ANALYSIS

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### 1. Identification

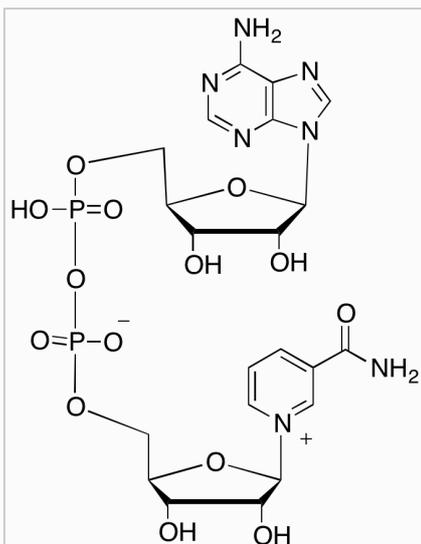
**Catalogue Number:** N407784

**CAS Number:** 53-84-9

**Product:** b-Nicotinamide Adenine Dinucleotide

**Synonym:** Adenosine 5'-(Trihydrogen Diphosphate), P' 5'-Ester with 3-(Aminocarbonyl)-1-?-D-ribofuranosylpyridinium Hydroxide, Inner Salt; Pyridinium, 3-Carbamoyl-1-?-D-ribofuranosyl-, Hydroxide, 5'?5'-Ester with Adenosine 5'-(Trihydrogen Pyrophosphate), Inner Salt (8CI); Adenine-nicotinamide Dinucleotide; CO-I; Codehydrase I; Codehydrogenase I; Coenzyme I; Cozymase I; DPN; Diphosphopyridine Nucleotide; Enzopride; NAD; NAD<sup>+</sup>; NSC 20272; Nadide; Nicotinamide-adenine Dinucleotide; Oxidized Diphosphopyridine N

**Structure:**



**Molecular Formula:**

C<sub>21</sub>H<sub>27</sub>N<sub>7</sub>O<sub>14</sub>P<sub>2</sub>

**Molecular weight:**

663.43

**Source of Product:**

N/A

**Solubility:**

3.5 mg/mL in Water (heated),  
4.3 mg/mL in DMSO (heated,  
son.), Not soluble in Me

**Lot Number:** 711616103-3-1

**Purity:** 98%

**Shipping Condition:** This Product Is Stable To Be Shipped At Room Temperature

**Storage Condition:** -20°C

### 2. Warning

**Warning 1:**

**Warning 2:**

**Warning 3:**

### 3. Analytical Information

Tests:	Specifications:	Results:
NMR	Conforms to Structure	Conforms
P NMR	Conforms to Structure	Conforms
HPLC Purity	Report Result	99.76% (260 nm)
Appearance	White to Pale Yellow Solid	White Solid
Specific Rotation	Report Result	-30.0° (c = 0.1, Water)
Elemental Analysis	Conforms	%C: 34.14, %H: 4.74, %N: 13.26
MS	Conforms to Structure	Conforms
Water Content	Report Result	~9.8% based on Elemental Analysis

**Additional Information:** N/A

**Purity is based on the analytical results of the tests performed. NMR and Elemental Analysis (if available) may have an accuracy of  $\pm 2\%$ . Isotopic purity is based on mass distribution observed. The contents of the specifications are subject to change without advance notice, and the specification values displayed here are the most up to date values.**

**4. Signatures**

<b>Reviewed By</b>	<b>Reviewed By</b>	<b>C of A Approved By</b>	<b>Test Date</b>	<b>Retest Date</b>
Henry Tieu	Toni Rantanen	Chanell Chu	7/21/2022	7/19/2026

