

SPECIFICATION SHEET

Product Name: β -Thionicotinamide Adenine Dinucleotide oxidized form free acid (β -Thio-NAD)

Catalog # TN01-C59

Product Description: Coenzyme β -Thionicotinamide Adenine Dinucleotide oxidized form free acid (β -Thio-NAD), CAS 4090-29-3, for catalytic reactions.

CAS: 4090-29-3

Storage and Stability: Product can be stored at ambient sealed, dry and protected from light for transportation process but long-term storage should be at -20°C in tightly closed contains, protected from humidity.

Alternate Names

: β -Thionicotinamide Adenine Dinucleotide oxidized form free acid, β -Thio-NAD, Thionicotinamide-DPN oxidized form, Thionicotinamide Adenine Dinucleotide oxidized form, sNAD

Appearance

: Yellow powder

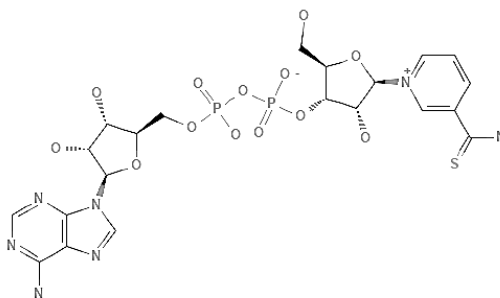
Molecular Weight

: 679.49 g/mol

Molecular Formula

: $\text{C}_{21}\text{H}_{27}\text{N}_7\text{O}_{13}\text{P}_2$

Molecular Structure



Purity Analysis

Purity: $\geq 95\%$ (HPLC)
 Assay: $\geq 95\%$ (UV) (calculated on a dry basis)
 Sodium Content: $\leq 1\%$
 Water Content: $\leq 5\%$

pH of Solution

: 2.0-4.0 (100 mg/mL water)

Scientific Background

: β -thionicotinamide adenine dinucleotide (β -Thio-NAD) is an analog of the coenzyme nicotinamide adenine dinucleotide (NAD) (1). β -Thio-NAD is reduced to β thio-NADH. β -Thio-NAD It is used for various clinical chemistry applications, including determining the levels of L-cartenine in serum by an enzymatic cycling method (2), ultrasensitive sandwich enzyme-linked immunosorbent assay (ELISA) assays for detection of infectious disease (3).

References

1. National Center for Biotechnology Information (2022). PubChem Compound Summary for CID 3081386, Thio-NAD. Retrieved October 24, 2022 from <https://pubchem.ncbi.nlm.nih.gov/compound/Thio-NAD>.
2. M Takahashi, S Ueda, H Misaki, N Sugiyama, K Matsumoto, N Matsuo, S Murao, Carnitine determination by an enzymatic cycling method with carnitine dehydrogenase, *Clinical Chemistry*, Volume 40, Issue 5, 1 May 1994, Pages 817- 821, <https://doi.org/10.1093/clinchem/40.5.817>
3. Iha K, Inada M, Kawada N, Nakaishi K, Watabe S, Tan YH, Shen C, Ke LY, Yoshimura T, Ito E. Ultrasensitive ELISA Developed for Diagnosis. *Diagnostics* (Basel). 2019 Jul 18;9(3):78. doi: 10.3390/diagnostics9030078. PMID: 31323782; PMCID: PMC6787603.

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