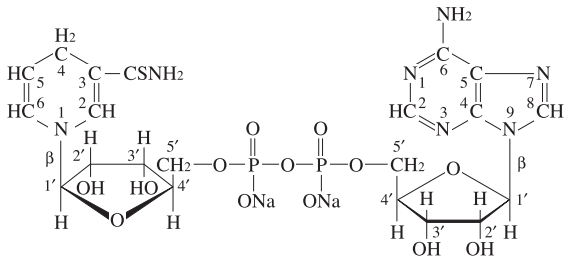
Thio-NADH

Thionicotinamide-adenine dinucleotide, reduced form (disodium salt)

prepared enzymatically

Structure



Formula

: $C_{21}H_{29}N_7O_{13}P_2S$

Formula Weight

: 681.5 (as anhydrous free acid)
: 725.5 (as disodium anhydrate)
: 779.5 (as disodium trihydrate)

Specification

Purity

Determined by Enzymatic Method (ADH)	≧ 90%

Water Content ＜ 10%

Na Content 6.0 ± 3.0%

UV Spectral Analysis

Ratio at pH 7.5

A_{250}/A_{260}	0.86 ± 0.05
A_{280}/A_{260}	0.39 ± 0.03

Assay Procedure

I Spectrophotometric Method

Wavelength : 340 nm, Light path length : 1 cm

Pipette the following reagents into a cuvette

2.75 mL	Acetaldehyde buffer* (1)	
0.25 mL	Thio-NAD^+ (0.4 mg/mL)* (2) measure the absorbance at 398 nm	Aa
0.10 mL	ADH (1,780 U/mL) measure the absorbance at 398 nm	Ab
0.10 mL	ADH (1,780 U/mL) measure the absorbance at 398 nm	Ac

* (1) Mix 0.2 mol/L Acetaldehyde and 0.1 mol/L Tris-HCl pH 7.5.
* (2) Dissolve in Tris (10 mmol/L)

II Calculation

$$\frac{\Delta A \cdot V \cdot MW \times 100}{11.9 \times 10^3 \cdot d \cdot v \cdot s} \times \frac{100}{(100 - S - W)} = \text{Purity of Thio-NADH}$$

$\Delta A = (Aa \times 3.00/3.20 - Ab \times 3.10/3.20) - (Ac - Ab \times 3.10/3.20)$

V = Total volume of reaction mixture (3.20 mL)

MW = 681.5, anhydrous free acid

11.9×10^3 = Molar extinction coefficient of Thio-NADH at 398 nm ($L \cdot mol^{-1} \cdot cm^{-1}$)

d = Light path length (1 cm)

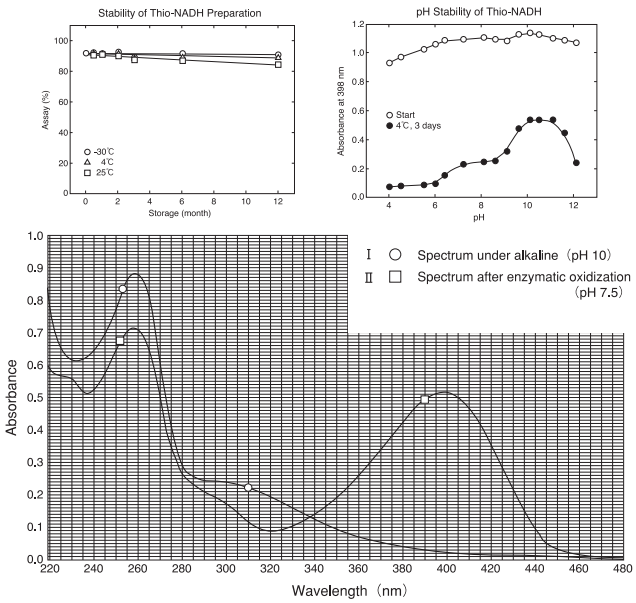
v = Sample volume (0.25 mL)

s = Sample concentration (0.4 mg/mL)

S = Na (%)

W = Water content (%)

Reference Data



Storage

Store below -20℃. Handling during short term such as transportation is allowed at 1 - 10℃.
Store in the dark. Keep off humidity.

Cat. No./Package

Cat. No.	Package
44317900	Bulk

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