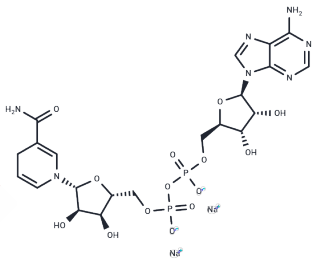
Data Sheet (Cat.No.T5283)

TargetMol

NADH disodium salt

Chemical Properties



CAS No. : 606-68-8

Formula: C21H27N7Na2O14P2

Molecular Weight: 709.4

Storage: Store under nitrogen,Store at low temperature,Keep away from direct sunlight,Keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	NADH disodium salt hydrate belongs to natural products and is a coenzyme of oxidoreductases with oral activity, serving as an electron donor in processes such as glycolysis, the tricarboxylic acid cycle, and β-oxidation. This compound is widely used in metabolism-related experimental research.
Targets(IC50)	Endogenous Metabolite
In vitro	**Methods**: In an ethanol system, different concentrations of NADH (0–40 μM) were mixed with DPPH solution, incubated at room temperature for 30 minutes, and absorbance at 517 nm was measured. **Results**: NADH exhibited concentration-dependent DPPH radical scavenging activity, but with lower potency than gallic acid. [1] **Methods**: Different concentrations of NADH (0–50 mM) were mixed with Pdots, incubated at room temperature, and fluorescence spectra were measured. **Results**: Pdots showed high sensitivity and selectivity for NADH. [2] **Methods**: NADH disodium salt (2 mM) was mixed with R848-N3 (1 mM) and TBR (2 mM), sonicated (1.0 MHz, 2.5 W/cm^2, 5 min), and analyzed by HPLC. **Results**: NADH disodium salt successfully mediated the reduction of R848-N3 to R848, confirming its in vitro activity as an electron donor. [3]
In vivo	**Methods**: NADH disodium salt (5 μMol/mouse, single dose) was administered to mice by intraperitoneal injection, and urine was collected to detect the excretion of nicotinamide and its metabolites. **Results**: NADH disodium salt increased urinary excretion of nicotinamide and its metabolites in mice. [4] **Methods**: Ethanol-loaded mice were given NADH disodium salt (500 mg/kg, single dose) by gavage to observe alcohol metabolism and liver injury indicators. NADH disodium salt (1000 mg/kg, single dose) was administered to male C57BL/6J mice by intraperitoneal injection, and tissue NAD+ levels were measured. **Results**: NADH disodium salt promoted alcohol metabolism and prevented and ameliorated early liver injury induced by acute alcohol exposure; NADH disodium salt enhanced tissue NAD+ levels in mice. [5]

Solubility Information

Solubility	DMSO: 100 mg/mL (140.96 mM),Sonication is recommended. H2O: 250 mg/mL (352.41 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (4.65 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.4096 mL	7.0482 mL	14.0964 mL
5 mM	0.2819 mL	1.4096 mL	2.8193 mL
10 mM	0.141 mL	0.7048 mL	1.4096 mL
50 mM	0.0282 mL	0.141 mL	0.2819 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Szerlauth, Adel et al. Molecular Antioxidants Maintain Synergistic Radical Scavenging Activity upon Co-Immobilization on Clay Nanoplatelets. ACS biomaterials science & engineering vol. 9,10 (2023): 5622-5631.
Chen, Haobin et al. Reversible Ratiometric NADH Sensing Using Semiconducting Polymer Dots. Angewandte Chemie (International ed. in English) vol. 60,21 (2021): 12007-12012.
Sun, Jiali et al. Ultrasound-induced single-electron reduction of azide groups in aromatic prodrugs. National science review vol. 12,6 nwaf140. 10 Apr. 2025
Kimura N, et al. Comparison of metabolic fates of nicotinamide, NAD+ and NADH administered orally and intraperitoneally; characterization of oral NADH. J Nutr Sci Vitaminol (Tokyo). 2006 Apr;52(2):142-8.
Wu K, et al. NADH and NRH as potential dietary supplements or pharmacological agents for early liver injury caused by acute alcohol exposure. Journal of Functional Foods, 2021, 87: 104852.