NAAD sodium

Cat. No.: HY-117029

CAS No.: 104809-30-5

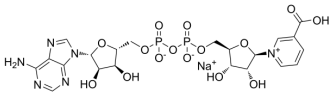
Molecular Formula: $C_{21}H_{25}N_6NaO_{15}P_2$

Molecular Weight: 686.39

Target: Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease

Storage: -20°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (145.69 mM; Need ultrasonic)
DMSO : 10 mg/mL (14.57 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.4569 mL	7.2845 mL	14.5690 mL
5 mM	0.2914 mL	1.4569 mL	2.9138 mL
10 mM	0.1457 mL	0.7284 mL	1.4569 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1 mg/mL (1.46 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (1.46 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1 mg/mL (1.46 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NAAD sodium (Deamido nad sodium), a functional NAD^+ precursor, is the substrate of glutamine-dependent NAD^+ synthetase. NAAD sodium is used to study the structure of nicotinate mononucleotide adenylyltransferases[1][2].

In Vitro

In peripheral blood mononuclear cells (PBMC), NAAD sodium is only expected to be produced in biosynthesis of NAD^+ from tryptophan and NA2, was elevated from less than 20 nM to as high as 0.91 μM[1].
Nicotinamide adenine dinucleotide synthetases (NADS) catalyze the amidation of nicotinic acid adenine dinucleotide (NAAD) to yield the enzyme cofactor nicotinamide adenine dinucleotide (NAD)[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	In mice, when nicotinic acid (NA) is provided by oral gavage, liver NA peaked (340 pmol/mg) in 15 min. Hepatic NA appearance is followed by an expected peak of 220 NAAD sodium at 1 h post gavage and a rise in hepatic NAD^+ from 990 baseline to 2200 at 2 h[1]. NAAD sodium is reported in mouse liver when 500 mg/kg of radioactive nicotinamide (Nam) is injected intraperitoneally (IP) into the body cavity of mice. However, NAAD sodium is observed in kidneys, ovaries, lung, heart and brain in addition to liver in mice IP-injected with 500 mg/kg of NA but not Nam[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Samuel A J Trammell, et al. Nicotinamide riboside is uniquely and orally bioavailable in mice and humans. Nat Commun. 2016 Oct 10;7:12948.

[2]. J Biol Chem. 2005 Apr 15;280(15):15131-40. Ralf Jauch, et al. Structures of Escherichia coli NAD synthetase with substrates and products reveal mechanistic rearrangements.

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