

PRODUCT INFORMATION



NADPH (cyclohexyl ammonium salt)

Item No. 20945

CAS Registry No.: 100929-71-3

Formal Name: tetracyclohexanamine (2R,3R,4R,5R)-2-(6-amino-9H-purin-9-yl)-5-(((((((2R,3S,4R,5R)-5-(3-carbamoylpyridin-1(4H)-yl)-3,4-dihydroxytetrahydrofuran-2-yl)methoxy)oxidophosphoryl)oxy)oxidophosphoryl)oxy)methyl)-4-hydroxytetrahydrofuran-3-yl phosphate
Synonym: Nicotinamide adenine dinucleotide phosphate

MF: $C_{21}H_{30}N_7O_{17}P_3 \cdot 4C_6H_{13}N$

FW: 1,142.1

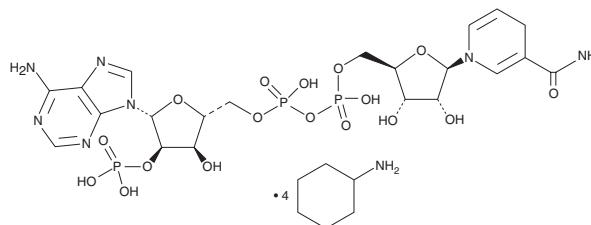
Purity: $\geq 95\%$

UV/Vis.: λ_{max} : 258, 336 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

NADPH (cyclohexyl ammonium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the NADPH (cyclohexyl ammonium salt) in the solvent of choice, which should be purged with an inert gas. ADPH (cyclohexyl ammonium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of NADPH (cyclohexyl ammonium salt) in these solvents is approximately 1, 20, and 0.2 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of NADPH (cyclohexyl ammonium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of NADPH (cyclohexyl ammonium salt) in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

NADPH is the reduced form of the electron acceptor nicotinamide adenine dinucleotide phosphate (NADP^+) and acts as an electron donor in various biological reactions. In plants, NADPH is produced by ferredoxin-NADP⁺ reductase in the last step of the electron chain during photosynthesis. In animals it is predominantly produced by the pentose phosphate pathway, but it is also generated by key mitochondrial enzymes. NADPH provides the reducing equivalents for biosynthetic reactions and the oxidation-reduction involved in protecting against the toxicity of reactive oxygen species.¹⁻³ It is also used for the synthesis of lipids and cholesterol and during the process of fatty acid chain elongation.⁴

References

1. Sumimoto, H. *FEBS Journal* **275**(13), 3249-3277 (2008).
2. Sutherland, M.W., Nelson, J., Harrison, G., et al. *Arch. Biochem. Biophys.* **243**(2), 325-331 (1985).
3. Nauseef, W.M. *J. Biol. Chem.* **283**(25), 16961-16965 (2008).
4. Tserng, K.Y. and Jin, S.J. *J. Biol. Chem.* **266**(18), 11614-11620 (1990).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM