

Product Name: NAADP tetrasodium salt

Catalog No.: 3905

Batch No.: 3

IUPAC Name: Nicotinic acid adenine dinucleotide phosphate tetrasodium salt

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₁H₂₃N₆Na₄O₁₈P₃

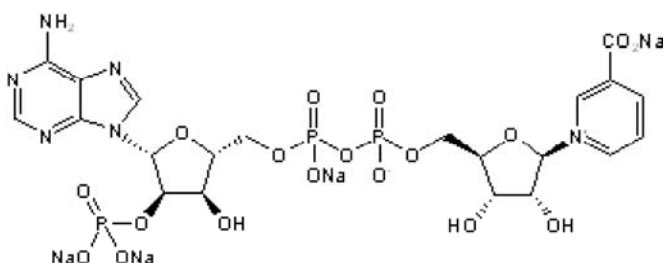
Batch Molecular Weight: 832.32

Physical Appearance: White solid

Solubility: water to 50 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 98.9% purity

Mass Spectrum: Consistent with structure

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

NAADP tetrasodium salt is a Ca²⁺ mobilizing agent. Initiates Ca²⁺ release via type 1 ryanodine receptor (RyR1) activation. Also regulates Ca²⁺ release from intracellular stores distinct from the endoplasmic reticulum (ER); displays affinity for two-pore channels (TPCs) which release Ca²⁺ from acidic organelles.

Physical and Chemical Properties:

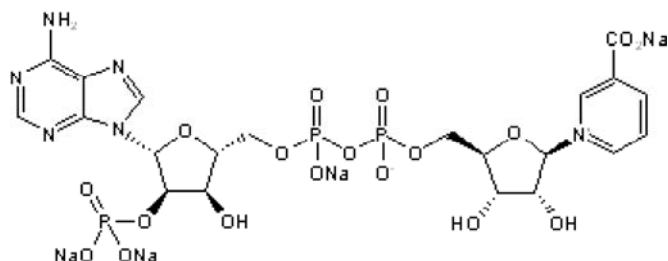
Batch Molecular Formula: C₂₁H₂₃N₆Na₄O₁₈P₃

Batch Molecular Weight: 832.32

Physical Appearance: White solid

Minimum Purity: ≥98%

Batch Molecular Structure:



Storage: Store at -20°C

Solubility & Usage Info:

water to 50 mM

Solutions of NAADP should ideally be prepared and used as quickly as possible. Solutions of 10 mg/mL stored at 2-8°C at neutral pH are expected to lose 2-5% activity per week. Solutions stored at -20°C are expected to lose between 2-5% activity after six months. Lyophilized NAADP shows a loss of activity of less than 2% after 12 months when stored at -20°C

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Calcraft et al (2009) NAADP mobilizes calcium from acidic organelles through two-pore channels. *Nature* **459** 596. PMID: 19387438.

Dammerman et al (2009) NAADP-mediated Ca²⁺ signaling via type 1 ryanodine receptor in T cells revealed by a synthetic NAADP agonist. *Proc.Natl.Acad.Sci.* **106** 10678.

Galion (2006) NAADP, a new intracellular messenger that mobilizes Ca²⁺ from acidic stores. *Biochem.Soc.Transactions* **34** 922.

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