

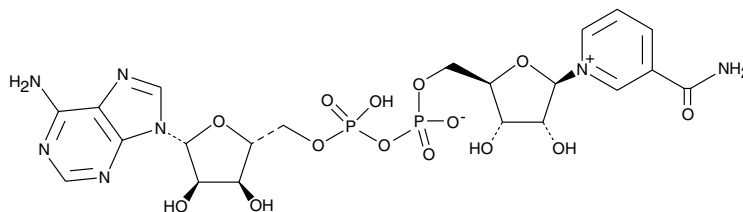
Product Information



NAD⁺ (free acid)

Item No. 16077

CAS Registry No.: 53-84-9
Formal Name: β-nicotinamide adenine dinucleotide hydrate
Synonym: Nicotinamide adenine dinucleotide
MF: C₂₁H₂₇N₇O₁₄P₂
FW: 663.4
Purity: ≥95%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 207, 260 nm



Laboratory Procedures

For long term storage, we suggest that NAD⁺ (free acid) be stored as supplied at -20°C. It should be stable for at least two years.

NAD⁺ (free acid) is supplied as a crystalline solid. NAD⁺ (free acid) is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. For biological experiments, we suggest that organic solvent-free aqueous solutions of NAD⁺ (free acid) be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of NAD⁺ (free acid) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

NAD⁺, known more formally as nicotinamide adenine dinucleotide, is a signaling molecule as well as a cofactor or substrate for many enzymes.¹ It acts as an oxidizing agent, accepting electrons from other molecules while being converted to its reduced form, NADH (Item No. 16078).¹ NAD⁺ is also essential for the activity of several enzymes, including poly(ADP)-ribose polymerases and cADP-ribose synthases.¹ For example, it is used by some sirtuins to mediate protein deacetylation, producing O-acetyl-ADP-ribose and nicotinamide as well as the deacetylated protein.²

References

1. Houtkooper, R.H., Cantó, C., Wanders, R.J., *et al.* The secret life of NAD⁺: An old metabolite controlling new metabolic signaling pathways. *Endocr. Rev.* **31**(2), 194-223 (2010).
2. Schwer, B. and Verdin, E. Conserved metabolic regulatory functions of sirtuins. *Cell Metab.* **7**, 104-112 (2008).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/16077

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