

PRODUCT INFORMATION



NAD⁺ (free acid)

Item No. 16077

CAS Registry No.: 53-84-9

Formal Name: adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with 3-(aminocarbonyl)-1-β-D-ribofuranosylpyridinium, inner salt

Synonyms: Nicotinamide adenine dinucleotide

MF: C₂₁H₂₇N₇O₁₄P₂

FW: 663.4

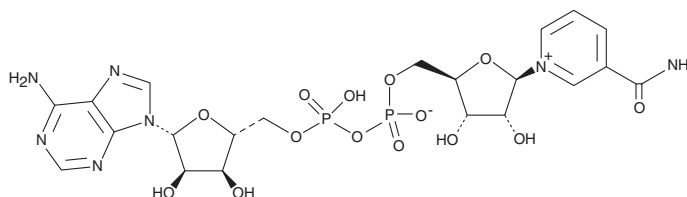
Purity: ≥90%

UV/Vis.: λ_{max}: 207, 260 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

NAD⁺ (free acid) is supplied as a crystalline solid. Aqueous solutions of NAD⁺ (free acid) can 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.

Description

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).

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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