

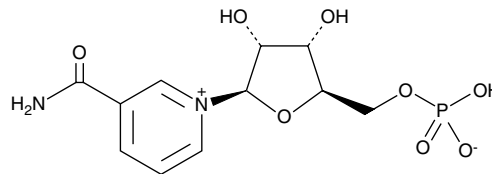
Product Information



β -Nicotinamide Mononucleotide

Item No. 16411

CAS Registry No.: 1094-61-7
Formal Name: 3-(aminocarbonyl)-1-(5-O-phosphono- β -D-ribofuranosyl)-pyridinium, inner salt
Synonym: β -NMN
MF: C₁₁H₁₅N₂O₈P
FW: 334.2
Purity: \geq 95%
Stability: \geq 2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{\max} : 210, 265 nm



Laboratory Procedures

For long term storage, we suggest that β -nicotinamide mononucleotide (β -NMN) be stored as supplied at -20°C. It should be stable for at least two years.

β -NMN is supplied as a crystalline solid. β -NMN 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 β -NMN be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of β -NMN in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

β -NMN is an intermediate in the biosynthesis of nicotinamide adenine dinucleotide (NAD⁺; Item No. 16077). Nicotinamide phosphoribosyltransferase (Nampt) catalyzes the condensation of nicotinamide with 5-phosphoribosyl-1-pyrophosphate to generate β -NMN, which is subsequently converted to NAD⁺ by β -NMN adenylyltransferase.¹ At 50-100 μ M, β -NMN has been used to enhance NAD biosynthesis and glucose-stimulated insulin secretion in a Nampt^{+/-} mouse model of metabolic disease, demonstrating a role for Nampt in β cell function.² Furthermore, at 500 mg/kg/day, it has been shown to ameliorate glucose intolerance in high-fat diet-induced type 2 diabetes mice by restoring NAD⁺ levels.³

References

1. Gallí, M., Van Gool, F., Rongvaux, A., *et al.* The nicotinamide phosphoribosyltransferase: A molecular link between metabolism, inflammation, and cancer. *Cancer Res.* **70**, 8-11 (2010).
2. Revollo, J.R., Körner, A., Mills, K.F., *et al.* Nampt/PBEF/visfatin regulates insulin secretion in β cells as a systemic NAD biosynthetic enzyme. *Cell Metab.* **6(5)**, 363-75 (2007).
3. Yoshino, J., Mills, K.F., Yoon, M.J., *et al.* Nicotinamide mononucleotide, a key NAD⁺ intermediate, treats the pathophysiology of diet- and age-induced diabetes in mice. *Cell Metab.* **14**, 528-536 (2011).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/16411

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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