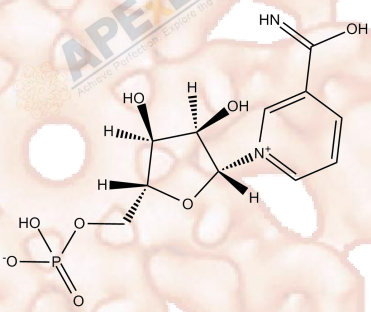
Product Data Sheet

beta-Nicotinamide mononucleotide

Cat. No.:	B7878
CAS No.:	1094-61-7
Formula:	C11H16N2O8P
M.Wt:	334.22
Synonyms:	β-NMN
Target:	NMNATs
Pathway:	Metabolic Enzyme
Storage:	Store at -20° C



Solvent & Solubility

In Vitro

≥33.4 mg/mL in H2O; insoluble in EtOH; insoluble in DMSO

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1mg	5mg	10mg
1 mM	2.9920 mL	14.9602 mL	29.9204 mL
5 mM	0.5984 mL	2.9920 mL	5.9841 mL
10 mM	0.2992 mL	1.4960 mL	2.9920 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary

Beta-Nicotinamide mononucleotide (β -NMN; CAS 1094-61-7) is an intermediate metabolite in the nicotinamide adenine dinucleotide (NAD+) biosynthetic pathway. By serving as a direct precursor, β -NMN supports NAD+ regeneration, influencing cellular energy metabolism. In Nampt-deficient (Nampt^+/-) mouse models, β -NMN supplementation (50-100 μM) elevates NAD+ synthesis, improving pancreatic β -cell insulin secretion under glucose stimulation. Additionally, in dietary obesity mouse models at 500 mg/kg/day, β -NMN administration corrects impaired glucose tolerance by restoring intracellular NAD+ concentrations. These properties position β -NMN as a research compound for metabolic regulation and related pathologies.

IC_{50} & Target

In Vitro

Cell Viability Assay

	Cell Line:	Primary islets isolated from Nampt+/- and control female mice
	Preparation method:	Islets were cultured overnight or for up to 48 hr in RPMI media containing 50 - 100 μM NMN0
	Reacting conditions:	50 μM NMN for overnight incubation
	Applications:	The addition of NMN significantly augmented insulin secretion in response to 20 mM glucose in both Nampt+/- and control islets, and after NMN treatment, glucose-stimulated insulin secretion (GSIS) did not differ between Nampt+/- and control islets.
In Vivo	**Animal experiment**	
	Animal models:	Nampt+/- female mice
	Dosage form:	500 mg/kg. Injected intraperitoneally ~ 14 h prior to intraperitoneal glucose tolerance tests (i.p. GTTs)
	Applications:	After NMN administration, there was no difference in blood glucose levels in i.p. GTTs between Nampt+/- and control female mice. In addition, NMN-treated Nampt+/- and control mice also had similar plasma insulin levels at each time point. These data clearly indicate that NMN administration corrects the defect in GSIS observed in Nampt+/- mice.
	Preparation method:	For i.p. GTTs, mice were injected with PBS or NMN (500 mg/kg body weight) and fasted for 14 hrs; dextrose (3 g/kg body weight) was then injected intraperitoneally; and blood glucose levels were measured at 0, 15, 30, 60, and 120 min after injection. Plasma was also collected at 0, 15, and 30 min time points after glucose injection and submitted to the Washington University RIA Core Facility for insulin measurements. For insulin tolerance tests, female mice were fasted for 4 hrs; human insulin (0.75 U/kg body weight) was injected intraperitoneally; and blood glucose levels were measured at 0, 15, 30, 45, and 60 min after insulin injection.
	Other notes:	The technical data provided above is for reference only.

Product Citations

See more customer validations on www.apexbt.com.

References

1. Revollo J R, Körner A, Mills K F, et al. Nampt/PBEF/visfatin regulates insulin secretion in B cells as a systemic NAD biosynthetic enzyme. Cell Metabolism, 2007, 6(5): 363-375.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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