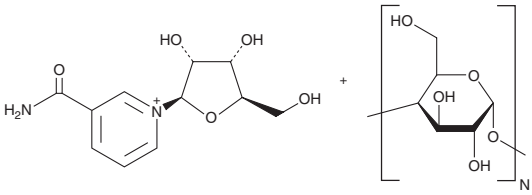
PRODUCT INFORMATION

Nicotinamide riboside

Item No. 23132

CAS Registry No.: 1341-23-7
Formal Name: 3-(aminocarbonyl)-1-β-D-ribofuranosyl-pyridinium
MF: $C_{11}H_{15}N_2O_5$
FW: 255.3
Purity: ≥95%
Contains ~80% cyclodextrin as stabilizer
Supplied as: A semi-solid
Storage: -20°C
Stability: ≥2 years
Special Conditions: Low melting



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Nicotinamide riboside is supplied as a low melting semi-solid. A stock solution may be made by dissolving the nicotinamide riboside in water. We do not recommend storing the aqueous solution for more than one day.

Description

Nicotinamide riboside is a riboside form of nicotinamide (Item No. 11127) that is found in trace amounts in yeast-containing and milk-derived products.[1] It is a precursor of NAD^+ (Item No. 16077) and a source of vitamin B_3 (niacin). Nicotinamide riboside increases intracellular and mitochondrial NAD^+ content in C2C12, Hepa1.6, and HEK293 cells in a concentration-dependent manner at concentrations ranging from 1-1,000 µM.[2] It also decreases acetylation of FOXO1 and SOD2, which are substrates of sirtuin 1 (SIRT1) and SIRT3, respectively, but not the SIRT2 substrate tubulin, indicating nicotinamide riboside selectively enhances SIRT1 and 3 deacetylase activity. Nicotinamide riboside (400 mg/kg per day) increases NAD^+ levels in liver and skeletal muscle and prevents body weight gain in mice fed a high-fat diet. It also increases NAD^+ in the cerebral cortex and reduces cognitive deterioration in a transgenic mouse model of Alzheimer's disease.[3]

References

1. Chi, Y. and Sauve, A.A. Nicotinamide riboside, a trace nutrient in foods, is a vitamin B3 with effects on energy metabolism and neuroprotection. *Curr. Opin. Clin. Nutr. Metab. Care* **15(6)**, 657-661 (2013).
2. Cantó, C., Houtkooper, R.H., Pirinen, E., *et al.* The NAD^+ precursor nicotinamide riboside enhances oxidative metabolism and protects against high-fat diet-induced obesity. *Cell Metab.* **15(6)**, 838-847 (2012).
3. Gong, B., Pan, Y., Vempati, P., *et al.* Nicotinamide riboside restores cognition through an upregulation of proliferator-activated receptor-γ coactivator 1α regulated β-secretase 1 degradation and mitochondrial gene expression in Alzheimer's mouse models. *Neurobiol. Aging* **34(6)**, 1581-1588 (2013).

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