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- Trockeneiszuschlag
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- Expressversand

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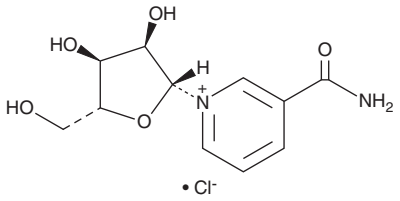
PRODUCT INFORMATION

Nicotinamide riboside (chloride)

Item No. 36941

CAS Registry No.:	23111-00-4
Formal Name:	3-(aminocarbonyl)-1-β-D-ribofuranosyl-pyridinium, monochloride
MF:	$C_{11}H_{15}N_2O_5 \bullet Cl$
FW:	290.7
Purity:	≥95%
UV/Vis.:	λ_{max}: 211, 268 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



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

Laboratory Procedures

Nicotinamide riboside (chloride) is supplied as a solid. A stock solution may be made by dissolving the nicotinamide riboside (chloride) in the solvent of choice, which should be purged with an inert gas. Nicotinamide riboside (chloride) is soluble in the organic solvent DMSO at a concentration of approximately 30 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of nicotinamide riboside (chloride) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of nicotinamide riboside (chloride) in PBS (pH 7.2) is approximately 10 mg/ml. 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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