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Zuschläge

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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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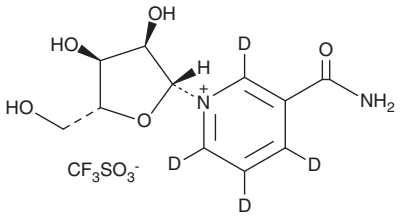
PRODUCT INFORMATION

Nicotinamide riboside-d_4 (triflate)

Item No. 34311

Formal Name:	3-carbamoyl-1-((2R,3R,4S,5R)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydrofuran-2-yl)pyridin-1-ium-2,4,5,6-d_4, trifluoromethanesulfonate
MF:	$C_{11}H_{11}D_4N_2O_5 \bullet CF_3SO_3$
FW:	408.3
Chemical Purity:	≥95% (Nicotinamide riboside)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as:	A solid (hygroscopic)
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-d_4 (triflate) is intended for use as an internal standard for the quantification of nicotinamide riboside (Item No. 23132) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Nicotinamide riboside-d_4 (triflate) is supplied as a solid (hygroscopic). A stock solution may be made by dissolving the nicotinamide riboside-d_4 (triflate) in the solvent of choice, which should be purged with an inert gas. Nicotinamide riboside-d_4 (triflate) is soluble in the organic solvent methanol.

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 when used 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 SIRT3 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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