

Product Data Sheet

Product Name: Nicotinamide riboside-d₄ (triflate)

Cat. No.: GC52214

Chemical Properties

Cas. No.

SMILES O[C@H]1[C@@]([N+](=O)=C([2H])C([2H])=C([2H])C(C(N)=O)=C2[2H])([H])O[C@@H]([C@H]1O)CO.FC(F)(S(=O)([O-])=O)F

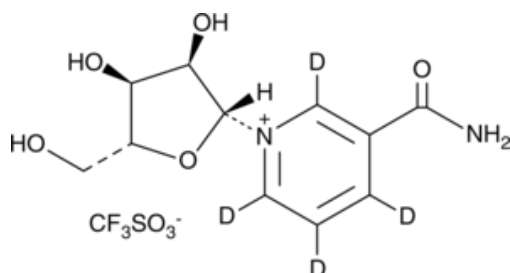
Formula C₁₁H₁₁D₄N₂O₅ ? CF₃SO₃ M.Wt 408.3

Solubility Methanol: soluble, Water: soluble Storage -20°C

General For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the tips ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Evaluation sample solution : ship with blue ice All other available size: ship with RT, or Condition blue ice upon request.

Structure



Background

Nicotinamide riboside-d₄ is intended for use as an internal standard for the quantification of nicotinamide riboside by GC- or LC-MS. Nicotinamide riboside is a riboside form of nicotinamide that is found in trace amounts in yeast-containing and milk-derived products.¹ It is a precursor of NAD⁺ and a source of vitamin B₃ (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

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

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

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 1 α regulated β -secretase 1 degradation and mitochondrial gene expression in Alzheimer's mouse models. *Neurobiol. Aging* 34(6):1581-1588 (2013)

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA