bio-techne
TOCRIS

Print Date: Feb 25th 2025

Certificate of Analysis

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Product Name: **Nicotinamide Riboside** **Catalog No.: 6018** **Batch No.: 2**

CAS Number: 23111-00-4

IUPAC Name: 3-(Aminocarbonyl)-1-β-D-ribofuranosylpyridinium chloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{11}H_{15}ClN_2O_5$.

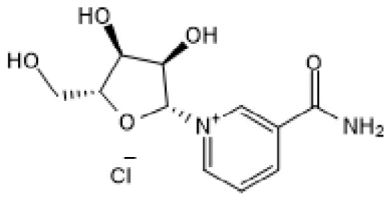
Batch Molecular Weight: 290.7

Physical Appearance: Off White solid

Solubility: DMSO to 100 mM
water to 100 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.0% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen	Chlorine
Theoretical	45.45	5.2	9.64	12.2
Found	44.87	5.01	9.59	11.92

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IUPAC Name: 3-(Aminocarbonyl)-1-β-D-ribofuranosylpyridinium chloride

Description:

Nicotinamide Riboside is an NAD^+ precursor. It is a substrate for nicotinamide riboside kinases (NRK1/2). Nicotinamide Riboside shows neuroprotective effects in a mouse model of type 2 diabetes and improves mitochondrial function in muscle stem cells in aged mice. The compound also corrects non-alchoholic fatty liver disease phenotype induced by NAD^+ deficiency or high-fat diet in mice. Orally bioavailable.

Physical and Chemical Properties:

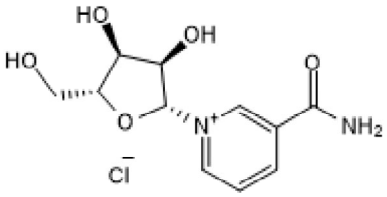
Batch Molecular Formula: $C_{11}H_{15}ClN_2O_5$.

Batch Molecular Weight: 290.7

Physical Appearance: Off White solid

Minimum Purity: ≥98%

Batch Molecular Structure:



Storage: Store at -20°C

Solubility & Usage Info:

DMSO to 100 mM
water to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Trammell *et al* (2016) Nicotinamide riboside opposes type 2 diabetes and neuropathy in mice. Sci.Rep. ***6***. PMID: 27230286.

Zhang *et al* (2016) NAD^+ repletion improves mitochondrial and stem cell function and enhances life span in mice. Science ***352*** 1436. PMID: 27127236.

Zhou *et al* (2016) Hepatic NAD(+) deficiency as a therapeutic target for non-alcoholic fatty liver disease in ageing. Br.J.Pharmacol. ***173*** 2352. PMID: 27174364.