

## Nicotinamide Datasheet

5<sup>th</sup> Edition (Revised in January, 2017)

### [ Product Information ]

**Name:** Nicotinamide

**Catalog No.:** CFN99926

**Cas No.:** 98-92-0

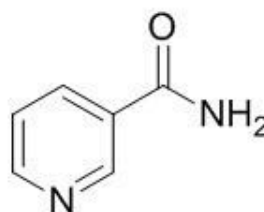
**Purity:** >=99%

**M.F:** C<sub>6</sub>H<sub>6</sub>N<sub>2</sub>O

**M.W:** 122.13

**Physical Description:** White powder

**Synonyms:**Pyridine-3-carboxamide; Vitamin PP; Nicotinic acid amide.



### [ Intended Use ]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals;
6. Others.

### [ Source ]

The herbs of *Nicotiana tabacum* L.

### [ Biological Activity or Inhibitors]

Sir2 and its closest human homologue SIRT1, a p53 deacetylase, are strongly inhibited by the vitamin B3 precursor nicotinamide, PNC1 (pyrazinamidase/nicotinamidase 1) is a longevity gene that is responsive to all stimuli that extend lifespan, nicotinamide depletion is sufficient to activate Sir2 and that this is the mechanism by which PNC1 regulates longevity, thus, nicotinamide and PNC1 can govern lifespan extension by calorie restriction in *Saccharomyces cerevisiae*.<sup>[1]</sup>

Nicotinamide and its derivatives can increase growth hormone and prolactin synthesis in cultured GH3 cells: role for ADP-ribosylation in modulating specific gene expression.<sup>[2]</sup>

Nicotinamide mononucleotide activation of new DNA-dependent polyadenylic acid synthesizing nuclear enzyme. <sup>[3]</sup>

Nicotinamide has insulinotropic action, it can induce differentiation and maturation of human fetal pancreatic islet cells.<sup>[4]</sup>

Nicotinamide may represent a safe treatment for Alzheimer's disease and other tauopathies, and that phosphorylation of tau at Thr231 may regulate tau stability.<sup>[5]</sup>

## **[ Solvent ]**

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

## **[ HPLC Method ]<sup>[6]</sup>**

Mobile phase: Methanol -Sodium salt of hexane sulphonic acid buffer=30:70 ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 254 nm.

## **[ Storage ]**

2-8°C, Protected from air and light, refrigerate or freeze.

## **[ References ]**

- [1] Anderson R M, Bitterman K J, Wood J G, *et al. Nature*, 2003, 423(6936):181-5.
- [2] Kimura N, Kimura N, Cathala G, *et al. Dna*, 1983, 2(3):195-203.
- [3] Chambon P, Weill J D, Mandel P. *Biochem. Biophys. Res. Commun.*, 1963, 11(1): 39-43.
- [4] T Otonkoski, G M Beattie, M I Mally, *et al. J. Clin. Invest.*, 1993, 92(3):1459-66.
- [5] Green K N, Steffan J S, Martinezcoria H, *et al. J. Neurosci.*, 2008 ,28(45):11500-10.
- [6] Anyakora C, Afolami I, Ehianeta T, *et al. Afr. J. Pharm. Pharmacol.*, 2008, 2(2):29-36.

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