



# SZABO SCANDIC

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## Produktinformation



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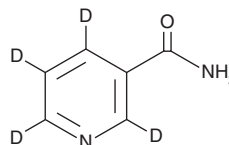
# PRODUCT INFORMATION



## Nicotinamide-d<sub>4</sub>

Item No. 34446

**CAS Registry No.:** 347841-88-7  
**Formal Name:** 3-pyridine-2,4,5,6-d<sub>4</sub>-carboxamide  
**Synonyms:** Niacinamide-d<sub>4</sub>, Nicotinic Acid Amide-d<sub>4</sub>, Vitamin B<sub>3</sub> Amide-d<sub>4</sub>  
**MF:** C<sub>6</sub>H<sub>2</sub>D<sub>4</sub>N<sub>2</sub>O  
**FW:** 126.2  
**Chemical Purity:** ≥98% (Nicotinamide)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥2 years  
**Item Origin:** Synthetic



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

### Laboratory Procedures

Nicotinamide-d<sub>4</sub> is intended for use as an internal standard for the quantification of nicotinamide (Item No. 11127) 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-d<sub>4</sub> is supplied as a solid. A stock solution may be made by dissolving the nicotinamide-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. Nicotinamide-d<sub>4</sub> is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of nicotinamide-d<sub>4</sub> in ethanol is approximately 2.5 mg/ml and approximately 15 mg/ml in DMSO and DMF.

### Description

Nicotinamide is an amide form of niacin, which is also known as vitamin B<sub>3</sub>, that can be biosynthesized *in vivo* or obtained through the diet.<sup>1</sup> It is a precursor in the synthesis of the metabolic cofactor NAD<sup>+</sup> and an inhibitor of sirtuin 1 (SIRT1; IC<sub>50</sub> = <50 μM).<sup>2</sup> Nicotinamide (10 μM) increases the activity of serine palmitoyltransferase (SPT) and the biosynthesis of ceramide, glucosylceramide, sphingomyelin, free fatty acids, and cholesterol in primary human keratinocytes.<sup>3</sup> Nicotinamide (40 μM) induces apoptosis in SNU-398, SNU-739, and HepG2 hepatocellular carcinoma (HCC) cells, and it prevents the formation of neoplastic lesions in a diethylnitrosamine-induced mouse model of HCC.<sup>4</sup> Unlike niacin, nicotinamide does not reduce plasma lipid levels or induce flushing.<sup>5-7</sup>

### References

1. Li, F., Chong, Z.Z., and Maiese, K. *Curr. Med. Chem.* **13**(8), 883-895 (2006).
2. Bitterman, K.J., Anderson, R.M., Cohen, H.Y., et al. *J. Biol. Chem.* **277**(47), 45099-45107 (2002).
3. Tanno, O., Ota, Y., Kitamura, N., et al. *Br. J. Dermatol.* **143**(3), 524-531 (2000).
4. Park, S.Y., Lee, K.B., Lee, M.-J., et al. *J. Cell. Physiol.* **227**(3), 899-908 (2012).
5. Lukasova, M., Hanson, J., Tunaru, S., et al. *Trends Pharmacol. Sci.* **32**(12), 700-707 (2011).
6. Bodor, E.T. and Offermanns, S. *Br. J. Pharmacol.* **153**(Suppl 1), S68-S75 (2008).
7. Haining, C.G. *Br. J. Pharmacol. Chemother.* **21**(1), 104-112 (1963).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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