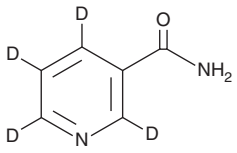
PRODUCT INFORMATION

Nicotinamide-d_4

Item No. 34446

CAS Registry No.:	347841-88-7
Formal Name:	3-pyridine-2,4,5,6-d_4-carboxamide
Synonyms:	Niacinamide-d_4, Nicotinic Acid Amide-d_4, Vitamin B_3 Amide-d_4
MF:	$C_6H_2D_4N_2O$
FW:	126.2
Chemical Purity:	≥98% (Nicotinamide)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as:	A solid
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-d_4 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_4 is supplied as a solid. A stock solution may be made by dissolving the nicotinamide-d_4 in the solvent of choice, which should be purged with an inert gas. Nicotinamide-d_4 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of nicotinamide-d_4 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_3, that can be biosynthesized *in vivo* or obtained through the diet.[1] It is a precursor in the synthesis of the metabolic cofactor NAD^+ and an inhibitor of sirtuin 1 (SIRT1; IC_{50} = <50 µM).[2] 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.[3] 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.[4] Unlike niacin, nicotinamide does not reduce plasma lipid levels or induce flushing.[5-7]

References

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