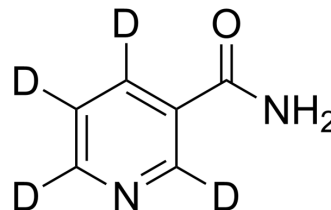


Nicotinamide-d₄

Cat. No.:	HY-B0150S		
CAS No.:	347841-88-7		
Molecular Formula:	C ₆ H ₂ D ₄ N ₂ O		
Molecular Weight:	126.15		
Target:	Sirtuin; Endogenous Metabolite		
Pathway:	Cell Cycle/DNA Damage; Epigenetics; Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (792.71 mM; Need ultrasonic)			
		Solvent Concentration	Mass	
			1 mg	5 mg
			10 mg	
Preparing Stock Solutions	1 mM	7.9271 mL	39.6354 mL	79.2707 mL
	5 mM	1.5854 mL	7.9271 mL	15.8541 mL
	10 mM	0.7927 mL	3.9635 mL	7.9271 mL
Please refer to the solubility information to select the appropriate solvent.				
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (19.82 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (19.82 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (19.82 mM); Clear solution 			

BIOLOGICAL ACTIVITY

Description	Nicotinamide-d ₄ is the deuterium labeled Nicotinamide. Nicotinamide is a form of vitamin B3 that plays essential roles in cell physiology through facilitating NAD ⁺ redox homeostasis and providing NAD ⁺ as a substrate to a class of enzymes that catalyze non-redox reactions. Nicotinamide is an inhibitor of SIRT1.
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs ^[1] .

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother*. 2019;53(2):211-216. ;Bhansali SG, et al. Nicotinamide prevents apoptosis in human cortical neuronal cells. *Toxicol Mech Methods*. 2006;16(4):17
- [2]. Bhansali SG, et al. Nicotinamide prevents apoptosis in human cortical neuronal cells. *Toxicol Mech Methods*. 2006;16(4):173-80.
- [3]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother*. 2019 Feb;53(2):211-216.
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Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA