Melatonin-d3

Cat. No.: HY-B0075S1

CAS No.: 90735-69-6

Molecular Formula: $C_{13}H_{13}D_3N_2O_2$

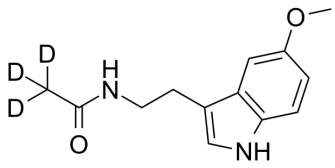
Molecular Weight: 235.3

Target: Melatonin Receptor; Apoptosis; Autophagy; Mitophagy; Endogenous Metabolite

Pathway: GPCR/G Protein; Neuronal Signaling; Apoptosis; Autophagy; 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 (424.99 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.2499 mL	21.2495 mL	42.4989 mL
5 mM	0.8500 mL	4.2499 mL	8.4998 mL
10 mM	0.4250 mL	2.1249 mL	4.2499 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Melatonin-d_3 is the deuterium labeled Melatonin. Melatonin is a hormone made by the pineal gland that can activates melatonin receptor. Melatonin plays a role in sleep and possesses important antioxidative and anti-inflammatory properties[1][2][3]. Melatonin is a novel selective ATF-6 inhibitor and induces human hepatoma cell apoptosis through COX-2 downregulation[4]. Melatonin attenuates palmitic acid-induced (HY-N0830) mouse granulosa cells apoptosis via endoplasmic reticulum stress[5].

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.

[2]. Kilic U, et al. Particular phosphorylation of PI3K/Akt on Thr308 via PDK-1 and PTEN mediates melatonin's neuroprotective activity after focal cerebral ischemia in mice. Redox Biol. 2017 Apr 5;12:657-665

[3]. Hu C, et al. Neuroprotective effect of melatonin on soluble Aβ1-42-induced cortical neurodegeneration via Reelin-Dab1 signaling pathway. Neurol Res. 2017 Apr 7:1-1

[4]. Zhi Chen, et al. Melatonin attenuates palmitic acid-induced mouse granulosa cells apoptosis via endoplasmic reticulum stress. J Ovarian Res. 2019 May 10;12(1):43.

[5]. Bu LJ, et al. Melatonin, a novel selective ATF-6 inhibitor, induces human hepatoma cell apoptosis through COX-2 downregulation. World J Gastroenterol. 2017 Feb 14;23(6):986-998.

[6]. Rahim I, et al. Melatonin administration to wild-type mice and non-treated NLRP3 mutant mice share similar inhibition of the inflammatory response during sepsis. J Pineal Res. 2017 Mar 31

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