Melatonin-d_4

Cat. No.: HY-B0075S

CAS No.: 66521-38-8

Molecular Formula: $C_{13}H_{12}D_4N_2O_2$

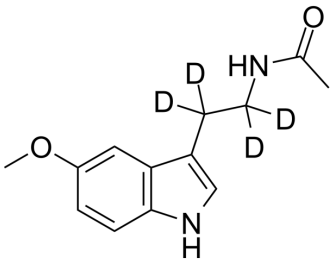
Molecular Weight: 236.3

Target: Melatonin Receptor; Autophagy; Mitophagy; Apoptosis

Pathway: GPCR/G Protein; Neuronal Signaling; Autophagy; Apoptosis

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 (423.19 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	4.2319 mL	21.1595 mL	42.3191 mL
	5 mM	0.8464 mL	4.2319 mL	8.4638 mL
	10 mM	0.4232 mL	2.1160 mL	4.2319 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (10.58 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (10.58 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.58 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Melatonin-d_4 is deuterium labeled Melatonin. Melatonin is a hormone made by the pineal gland that can activates melatonin receptor. Antioxidative and anti-inflammatory properties[1][2][3]. Melatonin is a selective ATF-6 inhibitor and induces human hepatoma cell apoptosis through COX-2 downregulation[4].

REFERENCES

[1]. 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

[2]. 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

[3]. 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

[4]. 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.

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