
Product Data Sheet

Product Name: Melatonin-d3

Cat. No.: GC69448

Chemical Properties

Cas. No. 90735-69-6

Formula $C_{13}H_{13}D_3N_2O_2$ M.Wt 235.3

Solubility DMSO : 100 mg/mL (424.99 mM; Need ultrasonic) Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

Background

Melatonin-d₃ is the deuterium labeled Melatonin. Melatonin is a hormone made by the pineal gland that can activates apoptosis via endoplasmic reticulum stress[5].

Stable heavy isotopes of drogen, 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].

[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 A β 1-42-induced cortical neurodegeneration via Reelin-Dab1 signaling pathway. *Neurol Res.* 2017 Apr 7:1-1

[4]. 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

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

[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]. 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.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA