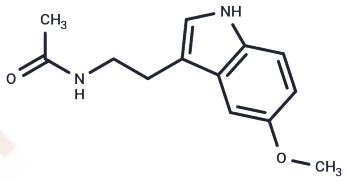
Data Sheet (Cat.No.T1659)

TargetMol

Melatonin

Chemical Properties



CAS No. : 73-31-4

Formula: C13H16N2O2

Molecular Weight: 232.28

Storage: Store at low temperature,Keep away from direct sunlight,Store under nitrogen
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Melatonin (Melatonine) is a natural hormone secreted by the pineal gland that activates melatonin receptors. Melatonin is a hormone that regulates the biological clock and also has antioxidant and anti-inflammatory activities.
Targets(IC50)	CaMK,Apoptosis,Mitophagy,Estrogen/progestogen Receptor,Melatonin Receptor, Glutathione Peroxidase,Endogenous Metabolite,Autophagy,ROR
In vitro	**METHODS**: Ten cells were pretreated with EIPA (50 μM) for 1.5 h. Dextran index was measured by Dextran uptake assay. **RESULTS**: Immortalized but untransformed hTERT-HME1 mammary epithelial cells and MCF10A cells did not exhibit megaloblast efflux in complete medium but stimulated dextran uptake by nutrient deprivation. Although PIK3CB was found to be required for growth factor-stimulated macrocytosis, oncogenic mutations in PIK3CA were sufficient to induce constitutive macrocytosis in mouse embryonic fibroblast MEFs and untransformed MCF10A cells. [1] **METHODS**: MKN28 cells were treated with EIPA (5-100 μM) for 48 h. Cell proliferation was detected by cell count. **RESULTS**: Cell exposure to EIPA inhibited the proliferation of MKN28 cells in a dose- and time-dependent manner. [2]
In vivo	**METHODS**: To assay in vivo activity, EIPA (10 mg/kg) was injected intraperitoneally into BALB/c mice bearing 4T1 xenografts, and 70 kD FITC-Ficoll was injected into the tumors 1 h later. The mice were necropsied 1 h after Ficoll injection, and the tumors were excised and frozen in OCT. **RESULTS**: EIPA-sensitive 70 kD FITC-Ficoll uptake was observed in in situ homozygous 4T1 tumors of BALB/c mice, suggesting that AMPK activation or other signals are sufficient to trigger the formation of large fusions in vivo. [1]

Solubility Information

Solubility	DMSO: 55 mg/mL (236.78 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+90% Saline: 1.16 mg/mL (4.99 mM),Solution. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.3051 mL	21.5257 mL	43.0515 mL
5 mM	0.861 mL	4.3051 mL	8.6103 mL
10 mM	0.4305 mL	2.1526 mL	4.3051 mL
50 mM	0.0861 mL	0.4305 mL	0.861 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

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Xue K H, Jiang Y F, Bai J Y, et al.Melatonin suppresses Akt/mTOR/S6K activity, induces cell apoptosis, and synergistically inhibits cell growth with sunitinib in renal carcinoma cells via reversing Warburg effect.Redox Report.2023, 28(1): 2251234.

Estaras M, et al. Melatonin controls cell proliferation and modulates mitochondrial physiology in pancreatic stellate cells. J Physiol Biochem. 2023 Feb;79(1):235-249.

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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

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