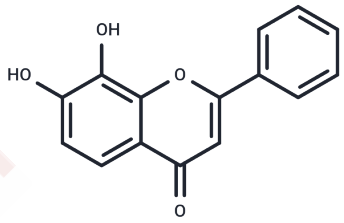
Data Sheet (Cat.No.T2816)

TargetMol

7,8-Dihydroxyflavone

Chemical Properties



CAS No. : 38183-03-8

Formula: C15H10O4

Molecular Weight: 254.24

Storage: Keep away from moisture,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	7,8-Dihydroxyflavone (7,8-DHF) is a naturally-occurring flavone and exist in Tridax procumbens, Godmania aesculifolia, and primula tree leaves.
Targets(IC50)	Apoptosis,Trk receptor
In vitro	7,8-DHF is one of the positive compounds that specifically activate TrkB, but not TrkA or TrkC, at a concentration of 250 nM. In addition to cortical and hippocampal neurons, 7,8-DHF also protects other cell types including the RGC (retinal ganglion cells) and PC12 cells from excitotoxic and oxidative stress-induced apoptosis and cell death. Thus, it has neuroprotective properties[1].
In vivo	7,8-Dihydroxyflavone is a bioavailable chemical that can pass through the BBB to provoke TrkB and its downstream PI3K/Akt and MAPK activation in mouse brain upon intraperitoneal or oral administration. 7,8-DHF promotes the survival and reduces apoptosis in cortical neurons of traumatic brain injury as administration of 7,8-DHF at 3 h post-injury reduces brain tissue damage via the PI3K/Akt pathway. Its treatment does not induce any apparent toxicity in mice and is not toxic to the mice during the chronic treatment. 7,8-DHF displays robust therapeutic efficacy toward Alzheimer's disease and inhibits obesity through activating muscular TrkB[1].
Cell Research	PC12 cells are seeded in 96-well plates at 104/well. After pretreatment with 7,8-DHF (1-25 μM) for 1 h, the cells are exposed to 6-OHDA (100 μM) for subsequent 24 h. The PI3k inhibitor LY294002 or MEK inhibitor PD98059 is added 30 min before 7,8-DHF treatment. At the end of the experiment, PC12 cells are incubated with 20 μl of MTT solution (5 mg/ml in PBS) for 4 h at 37 ?C. The dark blue formazan product due to the reduction of MTT is dissolved in 150 μl of DMSO, and the absorbance at 570 nm is recorded with a microplate reader. The viability is expressed as the percentage of the untreated control cells. (Only for Reference)

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 250 mg/mL (983.32 mM),Sonication is recommended. Ethanol: 1 mg/mL (3.93 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (7.87 mM),Sonication is recommended. *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	3.9333 mL	19.6665 mL	39.3329 mL
5 mM	0.7867 mL	3.9333 mL	7.8666 mL
10 mM	0.3933 mL	1.9666 mL	3.9333 mL
50 mM	0.0787 mL	0.3933 mL	0.7867 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

Liu C, et al. Transl Neurodegener. 2016, 5:2.
Yang C, Ali T, Li A, et al.Ketamine Reverses Chronic Corticosterone-Induced Behavioral Deficits and Hippocampal Synaptic Dysfunction by Regulating eIF4E/BDNF Signaling.Neuropharmacology.2024: 110156.
Bollen E, et al. Behav Brain Res. 2013, 257:8-12.
Han XH, et al. Neurosci Lett. 2014, 581:85-8.