Quercetin dihydrate

Cat. No.: HY-N0146

CAS No.: 6151-25-3

Molecular Formula: $C_{15}H_{14}O_9$

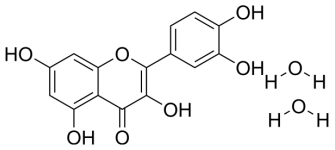
Molecular Weight: 338.27

Target: PI3K; Apoptosis

Pathway: PI3K/Akt/mTOR; 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 (295.63 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.9563 mL	14.7813 mL	29.5625 mL
5 mM	0.5913 mL	2.9563 mL	5.9125 mL
10 mM	0.2956 mL	1.4781 mL	2.9563 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 (7.39 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.39 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Quercetin dihydrate, a natural flavonoid, is a stimulator of recombinant SIRT1 and a PI3K inhibitor with IC_{50}s of 2.4 μM, 3.0 μM and 5.4 μM for PI3K γ, PI3K δ and PI3K β, respectively[1].

IC_{50} & Target

PI3Kγ	PI3Kβ	PI3Kδ
2.4 μM (IC_{50})	5.4 μM (IC_{50})	3.0 μM (IC_{50})

In Vitro

Quercetin dihydrate is a type of plant-based chemical, or phytochemical, used as an ingredient in supplements, beverages or foods. In several studies, it may have anti-inflammatory and antioxidant properties, and it is being investigated for a wide range of potential health benefits[1].

Quercetin dihydrate is a PI3K inhibitor with IC_{50}s of 2.4-5.4 μM. Quercetin dihydrate strongly abrogates PI3K and Src kinases, mildly inhibits Akt1/2, and slightly affected PKC, p38 and ERK1/2[1].

Quercetin dihydrate inhibits TNF-induced LDH% release, EC-dependent neutrophils adhesion to bovine pulmonary artery endothelial cells (BPAEC), and BPAEC DNA synthesis and proliferation[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Adv Funct Mater. 27 January 2022.
- Nat Aging. 2024 Apr;4(4):527-545.
- Environ Pollut. 25 August 2021, 118036.
- Food Chem. 2022: 134807.
- Biomed Pharmacother. 2024 Apr 25:175:116606.

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REFERENCES

[1]. Navarro-Núñez L, et al. Effect of quercetin on platelet spreading on collagen and fibrinogen and on multiple platelet kinases. Fitoterapia. 2010 Mar;81(2):75-80.

[2]. Yu XB, et al. Inhibitory effects of protein kinase C inhibitors on tumor necrosis factor induced bovine pulmonary artery endothelial cell injuries. Yao Xue Xue Bao. 1996;31(3):176-81.

[3]. Yang F, et al. Combination of Quercetin and 2-Methoxyestradiol Enhances Inhibition of Human Prostate Cancer LNCaP and PC-3 Cells Xenograft Tumor Growth. PLoS One. 2015 May 26;10(5):e0128277.

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

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