Fisetin quarterhydrate

Cat. No.: HY-N0182A

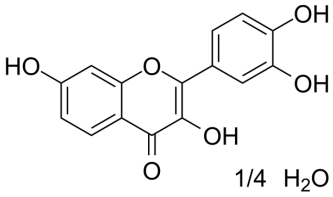
Molecular Formula: $C_{15}H_{10}O_6.1/4H_2O$

Molecular Weight: 290.75

Target: Sirtuin; PPAR; TNF Receptor

Pathway: Cell Cycle/DNA Damage; Epigenetics; Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor; Apoptosis

Storage: 4°C, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (343.94 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.4394 mL	17.1969 mL	34.3938 mL
	5 mM	0.6879 mL	3.4394 mL	6.8788 mL
	10 mM	0.3439 mL	1.7197 mL	3.4394 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 (8.60 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.60 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fisetin quarterhydrate is a natural flavonol found in many fruits and vegetables with various benefits, such as antioxidant, anticancer, neuroprotection effects.

IC_{50} & Target

Sirtuin, PPAR, TNF-alpha[1][2]

In Vitro

Fisetin quarterhydrate inhibits lipid accumulation and suppresses the expression of PPARγ in 3T3-L1 cells. Fisetin quarterhydrate suppresses early stages of preadipocyte differentiation, and induces expression of Sirt1. Fisetin quarterhydrate facilitates Sirt1-mediated deacetylation of PPARγ and FoxO1, and enhances the association of Sirt1 with the PPARγ promoter, leading to suppression of PPARγ transcriptional activity, thereby repressing adipogenesis[1]. Fisetin quarterhydrate binds to tubulin and stabilizes microtubules with binding characteristics far superior than paclitaxel. Fisetin quarterhydrate treatment of human prostate cancer cells results in robust up-regulation of microtubule associated proteins

	(MAP)-2 and -4. Fisetin quarterhydrate significantly inhibits PCa cell proliferation, migration, and invasion. Nudc, a protein associated with microtubule motor dynein/dynactin complex that regulates microtubule dynamics, is inhibited with Fisetin quarterhydrate treatment[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Fisetin quarterhydrate treatment to UVB exposed mice results in decreased hyperplasia and reduces infiltration of inflammatory cells. Fisetin quarterhydrate treatment also reduces inflammatory mediators such as COX-2, PGE2 as well as its receptors (EP1- EP4), and MPO activity. Furthermore, Fisetin quarterhydrate reduces the level of inflammatory cytokines TNFα, IL-1β and IL-6 in UVB exposed skin. Fisetin quarterhydrate treatment also reduces cell proliferation markers as well as DNA damage as evidenced by increased expression of p53 and p21 proteins[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Aging. 2024 Apr;4(4):527-545.
- Acta Pharmacol Sin. 2023 May 24.
- Cells. 2022, 11(13), 1992.
- J Mol Liq. 23 November 2021, 118164.
- J Nutr Biochem. 2023 Sep 23;109452.

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REFERENCES

[1]. Kim SC, et al. Fisetin induces Sirt1 expression while inhibiting early adipogenesis in 3T3-L1 cells. Biochem Biophys Res Commun. 2015 Nov 27;467(4):638-44.

[2]. Mukhtar E, et al. Dietary flavonoid fisetin binds to β-tubulin and disrupts microtubule dynamics in prostate cancer cells. Cancer Lett. 2015 Oct 28;367(2):173-83.

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