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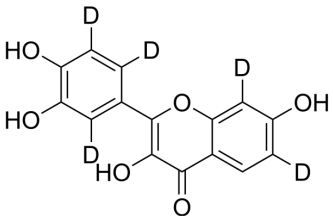
Fisetin-d_5

Cat. No.:	HY-N0182S3
CAS No.:	2909407-29-8
Molecular Formula:	$C_{15}H_5D_5O_6$
Molecular Weight:	291.27
Target:	PPAR; Sirtuin; TNF Receptor; Isotope-Labeled Compounds
Pathway:	Cell Cycle/DNA Damage; Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor; Epigenetics; Apoptosis; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Fisetin-d5 is a deuterated labeled Fisetin[1]. Fisetin is a natural flavonol found in many fruits and vegetables with various benefits, such as antioxidant, anticancer, neuroprotection effects.
In Vitro	Stable heavy isotopes of hydrogen, 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]. Fisetin inhibits lipid accumulation and suppresses the expression of PPARγ in 3T3-L1 cells. Fisetin suppresses early stages of preadipocyte differentiation, and induces expression of Sirt1. Fisetin 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[2]. Fisetin binds to tubulin and stabilizes microtubules with binding characteristics far superior than paclitaxel. Fisetin treatment of human prostate cancer cells results in robust up-regulation of microtubule associated proteins (MAP)-2 and -4. Fisetin 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 treatment[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Fisetin treatment to UVB exposed mice results in decreased hyperplasia and reduces infiltration of inflammatory cells. Fisetin treatment also reduces inflammatory mediators such as COX-2, PGE2 as well as its receptors (EP1- EP4), and MPO activity. Furthermore, Fisetin reduces the level of inflammatory cytokines TNFα, IL-1β and IL-6 in UVB exposed skin. Fisetin treatment also reduces cell proliferation markers as well as DNA damage as evidenced by increased expression of p53 and p21 proteins[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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.

[3]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

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

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