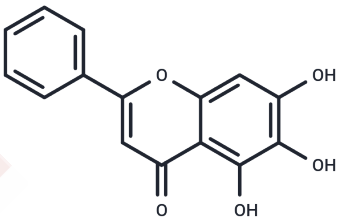
Data Sheet (Cat.No.T2858)

TargetMol

Baicalein

Chemical Properties



CAS No. : 491-67-8

Formula: C15H10O5

Molecular Weight: 270.24

Storage: Store under nitrogen,Keep away from direct sunlight
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	Baicalein (5,6,7-Trihydroxyflavone) is a xanthine oxidase inhibitor.
Targets(IC50)	Ferroptosis,Influenza Virus,ROS,Xanthine Oxidase
In vitro	Baicalein effectively inhibits T cell proliferation and cytokine secretion in response to mitogens in vitro. It has been observed that pre-treatment with baicalein markedly reduces both Con A or anti-CD3/CD28 mAb-induced cell proliferation and cytokine release at a concentration of 25 μM. Additionally, baicalein initiates NF-κB DNA binding while concurrently inhibiting nuclear thioredoxin activity. Furthermore, baicalein hampers the proliferation, migration, and invasion of MDA-MB-231 cells in both a time- and dose-dependent manner, significantly lowering SATB1 expression in these cells. It also diminishes the expression of Wnt1 and β-catenin proteins, along with the transcription of Wnt/β-catenin-regulated genes.
In vivo	Baicalein effectively reduces graft versus host disease induction without hindering T-cell homeostatic proliferation in mice, demonstrating its significant anti-inflammatory properties in vivo[2]. Further, in rats, baicalein administration guards against elevated heart to body weight ratios, increases in plasma brain natriuretic peptide levels, intraventricular septum thickness, and myocardial collagen volume in the left ventricle (all P<0.05, respectively). Its antifibrotic action is underscored by the reduced expression of pro-collagens I and III in the left ventricle, alongside diminished expression of 12-lipoxygenase, and lowered expression and activity of matrix metallopeptidase 9 and extracellular signal-regulated kinases, thus demonstrating baicalein's capability to inhibit cardiac fibrosis in hypertensive rats[4].
Cell Research	MTT assay is conducted to evaluate the effect of baicalein on proliferation of breast cancer cells. MDA-MB-231 cells are routinely digested, collected, and then seeded in 96-well plates at a density of 8×103 cells/well. After incubation for 12-24 hours, cells are treated with 0, 20, 40, 60, 80, 100, and 120 μM baicalein according to their experimental grouping and then incubated at 37°C for 24, 48, and 72 hours[3].

Solubility Information

Solubility	DMSO: 70.7 mg/mL (261.62 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: 1.35 mg/mL (5 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	3.7004 mL	18.5021 mL	37.0041 mL
5 mM	0.7401 mL	3.7004 mL	7.4008 mL
10 mM	0.370 mL	1.8502 mL	3.7004 mL
50 mM	0.074 mL	0.370 mL	0.7401 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

Ma X, et al. Baicalein suppresses metastasis of breast cancer cells by inhibiting EMT via downregulation of SATB1 and Wnt/β-catenin pathway. Drug Des Devel Ther. 2016 Apr 18;10:1419-41.
Zhang H, Cai J, Li C, et al.Wogonin inhibits latent HIV-1 reactivation by downregulating histone crotonylation. Phytomedicine.2023: 154855.
Yan H, Zhang R, Yan G, et al.Validation of baicalein and oridonin as nonspecific SARS-CoV-2 main protease inhibitors.Phytotherapy Research.2023
Wang M, et al. Baicalein induced apoptosis and autophagy of undifferentiated thyroid cancer cells by the ERK/PI3K/Akt pathway. Am J Transl Res. 2019 Jun 15;11(6):3341-3352.
Chen J, Zhou X, Fu L, et al.Natural Product-Based Screening for Lead Compounds Targeting SARS CoV-2 Mpro[J]. Pharmaceuticals, 2023, 16(5): 767..Pharmaceuticals.2023, 16(5): 767.
Kong EK, et al. A novel anti-fibrotic agent, baicalein, for the treatment of myocardial fibrosis in spontaneously hypertensiverats. Eur J Pharmacol. 2011 May 11;658(2-3):175-81.
Meng X, Mao Z, Li X, et al. Baicalein decreases uric acid and prevents hyperuricemic nephropathy in mice[J]. Oncotarget. 2017, 8(25): 40305.
Xiao T, Cui M, Zheng C, et al. Both Baicalein and Gallocatechin Gallate Efficaciously Inhibit SARS-CoV-2 Replication by Targeting Mpro and Sepsis in Mice. Inflammation. 2021: 1-13.
Xue H, Huo Y, Hu Y, et al. The role of ALOX15B in heat stress-induced apoptosis of porcine sertoli cells. Theriogenology. 2022
Lu H, Li X, Wang G, et al. Baicalein Ameliorates Streptococcus suis-Induced Infection In Vitro and In Vivo. International Journal of Molecular Sciences. 2021, 22(11): 5829.
Meng X, Mao Z, Li X, et al. Baicalein decreases uric acid and prevents hyperuricemic nephropathy in mice. Oncotarget. 2017, 8(25): 40305.