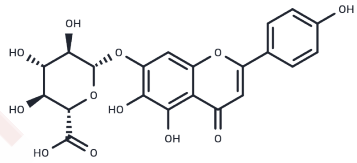
Data Sheet (Cat.No.T2789)

TargetMol

Scutellarin

Chemical Properties



CAS No. : 27740-01-8

Formula: C21H18O12

Molecular Weight: 462.36

Storage: 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	Scutellarin (Scutellarein-7-glucuronide), an active flavone isolated from Scutellaria baicalensis, can inhibit RANKL-mediated MAPK and NF-κB signaling pathway in osteoclasts, and down-regulate the STAT3/Girdin/Akt signaling in HCC cells.
Targets(IC50)	Akt,HIV Protease,STAT
In vitro	Scutellarin significantly lowers HepG2 cell viability in a dose-dependent manner and hampers HCC cells' migration and invasion in vitro. It notably decreases STAT3 and Girdin expression, along with the phosphorylation of STAT3 and Akt in HCC cells. The overexpression of STAT3 reverses the suppression by scutellarin of Girdin expression and Akt activation, restoring HCC cells' ability to migrate and invade. Furthermore, overexpression of Girdin nullifies scutellarin's inhibitory effects on Akt phosphorylation, and on the migration and invasion of HCC cells. Scutellarin can prevent HCC cell metastasis in vivo and restrict their migration and invasion in vitro by targeting the STAT3/Girdin/Akt pathway. Additionally, scutellarin has a neuroprotective role by inhibiting microglial activation, mitigating neuroinflammation, and promoting astrocytic response by upregulating neurotrophic factor expression. This demonstrates a beneficial interaction between activated microglia and astrocytes. Scutellarin also impedes RANKL-mediated osteoclastogenesis and bone resorption by reducing osteoclast-specific gene expression (TRAP, cathepsin K, c-Fos, NFATc1) and inhibiting the RANKL-mediated MAPK and NF-κB signaling pathways, including JNK1/2, p38, ERK1/2, and IκBα phosphorylation.
In vivo	Scutellarin administration at a dosage of 50 mg/kg/day notably reduces both lung and intrahepatic metastasis of HCC tumors in vivo. Comparatively, the scutellarin-treated group exhibits a significant decrease in the number of metastatic tumors in the lung and liver versus the control group[1]. Furthermore, rats receiving Scutellarin show marked improvement in neurobehavioral deficits in contrast to the SAH group, alongside an enhancement in eNOS expression[4].
Cell Research	HepG2 cells (1×105/well) are cultured in 96-well plates and treated in triplicate with scutellarin at concentrations of 5, 10, 20, 30, and 100 μM or vehicle alone for 24 h. The cellular viability is tested by 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay, and is expressed as a percentage of proliferation versus controls.

Solubility Information

Solubility	DMSO: 240 mg/mL (519.08 mM),Sonication is recommended. H2O: insoluble (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1628 mL	10.8141 mL	21.6282 mL
5 mM	0.4326 mL	2.1628 mL	4.3256 mL
10 mM	0.2163 mL	1.0814 mL	2.1628 mL
50 mM	0.0433 mL	0.2163 mL	0.4326 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

Ke Y, et al. Scutellarin suppresses migration and invasion of human hepatocellular carcinoma by inhibiting the STAT3/Girdin/Akt activity. Biochem Biophys Res Commun. 2016 Dec 18. pii: S0006-291X(16)32174-X.
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Yang X, Liu L, Hao Y, et al. A Bioluminescent Biosensor for Quantifying the Interaction of SARS-CoV-2 and Its Receptor ACE2 in Cells and In Vitro. Viruses. 2021, 13(6): 1055.
Deng G, Zheng B, Dou M, et al.Scutellarin alleviates renal ischemia-reperfusion injury by inhibiting the MAPK pathway and pro-inflammatory macrophage polarization.The FASEB Journal.2024, 38(13): e23769.
Wu CY, et al. Scutellarin attenuates microglia-mediated neuroinflammation and promotes astrogliosis in cerebral ischemia - a therapeutic consideration. Curr Med Chem. 2016 Nov 18. [Epub ahead of print]
Li Q, et al. Scutellarin attenuates vasospasm through the Erk5-KLF2-eNOS pathway after subarachnoid hemorrhage in rats. J Clin Neurosci. 2016 Dec;34:264-270.
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