Data Sheet (Cat.No.TN5448)

TargetMol

Steppogenin

Chemical Properties

CAS No. : 56486-94-3

Formula: C15H12O6

Molecular Weight: 288.25

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	Steppogenin exhibits significant tyrosinase inhibition activity, with IC50 values below 50 μM in mushroom tyrosinase assays and greater potency than kojic acid (IC50 = 71.6 μM). Steppogenin is utilized in biochemical research focused on melanogenesis regulation, tyrosinase enzymatic inhibition mechanisms, and pigment biosynthesis pathway studies.
Targets(IC50)	Tyrosinase
In vitro	Methods:HEK293T cells and vascular endothelial cells were treated with Steppogenin at different concentrations for various durations, and a hypoxia model was established. The transcriptional activity of HIF-1α, expression of related genes and proteins, as well as proliferation, migration and spheroid sprouting ability of endothelial cells were detected. Results: 1.After 24-hour treatment with 0-10 μM Steppogenin, the HIF-1α transcriptional activity in hypoxic HEK293T cells was suppressed in a concentration-dependent manner. Meanwhile, VEGF-induced DLL4 expression was downregulated in vascular endothelial cells. 2.Under hypoxic conditions, 6-hour treatment with 0-3 μM Steppogenin markedly reduced the mRNA levels of HIF-1α downstream target genes, including VEGF, GLUT1, CXCR4 and CA9. 3.Treatment with 0-3 μM Steppogenin for 16 hours decreased HIF-1α protein content and downregulated the protein expression of VEGF, CXCR4 and CA9. 4.After 24-hour incubation with 0-3 μM Steppogenin, hypoxia-induced proliferation and migration of vascular endothelial cells, as well as VEGF-mediated endothelial spheroid sprouting were inhibited [1].
In vivo	Methods:Tumor-bearing mice received a single intraperitoneal injection of 2 mg/kg Steppogenin. Tumor growth and angiogenesis were observed. Tissue distribution, area under the curve (AUC) and half-life ($T_1/_2$) of the drug were also determined. Results:This administration regimen effectively inhibited tumor growth and angiogenesis. Steppogenin accumulated most abundantly in the liver and spleen, with AUC ratios of 25.5-fold and 9.74-fold respectively. Its half-life was significantly prolonged in these two tissues [1].

Solubility Information

Solubility	DMSO: 2.4 mg/mL (8.33 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.4692 mL	17.3461 mL	34.6921 mL
5 mM	0.6938 mL	3.4692 mL	6.9384 mL
10 mM	0.3469 mL	1.7346 mL	3.4692 mL
50 mM	0.0694 mL	0.3469 mL	0.6938 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

Cha S, et al. Steppogenin suppresses tumor growth and sprouting angiogenesis through inhibition of HIF-1α in tumors and DLL4 activity in the endothelium. Phytomedicine. 2023 Jan;108:154513.