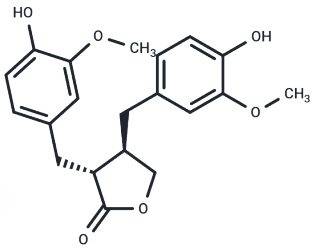
Data Sheet (Cat.No.TN1916)

TargetMol

Matairesinol

Chemical Properties



CAS No. : 580-72-3

Formula: C20H22O6

Molecular Weight: 358.39

Storage: 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	Matairesinol is a phytolignan found in a variety of foods such as seeds, vegetables and fruits.Matairesinol has a variety of biological functions including anti-angiogenic, anti-cancer and anti-fungal activities; the anti-osteoporotic activity of matairesinol may derive from its anti-osteoclastic potential through p38/ERK-NFATc1 signaling , rather than through an anti-resorptive effect.
Targets(IC50)	ATPase,Endogenous Metabolite,p38 MAPK,ROS
In vitro	**METHODS**: Antiproliferative effect of matairesinol on human pancreatic cancer cells. Cell proliferation was analyzed in PANC-1 and MIA PaCa-2 using different matairesinol treatments (0, 5, 10, 20, 40, 80 and 100 μM). **RESULTS** The 80 μM concentration of matairesinol inhibited proliferation by 48% in PANC-1 cells and inhibited cellular appreciation by 50% in MIA PaCa-2 cells. **METHODS**: Immunoblotting images of PCNA were analyzed in PANC-1 and MIA PaCa-2 cells treated with matairesinol (0, 20, 40, and 80 μM), and the inhibitory effect of matairesinol on globule formation was assessed in a three-dimensional (3D) environment using a droplet assay. **RESULTS** Treatment with matairesinol (80 μM) reduced PCNA expression by 30% and 33% in both PC cell lines; in PANC-1 cells, the relative total area of formed spheroids was reduced by 78% in PANC-1 cells ($p < 0.05$) and 61% in MIA PaCa-2 cells ($p < 0.01$). [1] Translated with DeepL.com (free version)
In vivo	**METHODS**: A rat sepsis model was established by CLP surgery. On this basis, the rats were given Matairesinol (5, 10, 20 mg/kg, oral administration). Subsequently, blood and IHC were performed to calculate the number of Caspase-3 positive cells and TUNEL staining was performed to detect tissue apoptosis. **RESULTS** Matairesinol (>5 mg/kg) inhibited the production of S100β, GFAP and NSE; at the same time, the use of Matairesinol on the basis of CLP reduced the damage of CLP to brain tissue and neurons; Matairesinol (>5 mg/kg) significantly inhibited the expression of Caspase-3 and inhibited cell apoptosis. [2]

Solubility Information

Solubility	DMSO: 200 mg/mL (558.05 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7903 mL	13.9513 mL	27.9026 mL
5 mM	0.5581 mL	2.7903 mL	5.5805 mL
10 mM	0.279 mL	1.3951 mL	2.7903 mL
50 mM	0.0558 mL	0.279 mL	0.5581 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

Lee W, et al. Matairesinol Induces Mitochondrial Dysfunction and Exerts Synergistic Anticancer Effects with 5-Fluorouracil in Pancreatic Cancer Cells. Mar Drugs. 2022 Jul 25;20(8):473.
Wu Q, et al. Matairesinol exerts anti-inflammatory and antioxidant effects in sepsis-mediated brain injury by repressing the MAPK and NF-κB pathways through up-regulating AMPK. Aging (Albany NY). 2021 Oct 27;13(20): 23780-23795.
Choi SW, et al. Anti-osteoclastogenic activity of matairesinol via suppression of p38/ERK-NFATc1 signaling axis. BMC Complement Altern Med. 2014 Jan 21;14:3doi: 10.1186/1472-6882-14-35.