Data Sheet (Cat.No.TN2857)

TargetMol

3-(2-Hydroxyphenyl)-2-propenal

Chemical Properties

CAS No. : 60125-23-7

Formula: C9H8O2

Molecular Weight: 148.16

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	3-(2-Hydroxyphenyl)-2-propenal is a natural phenylpropanal isolated from the bark of the cassia cinnamon (Cinnamomum cassia). 3-(2-Hydroxyphenyl)-2-propenal inhibits the proliferation of various tumor cells and induces apoptosis by directly binding to STAT3 and inhibiting its phosphorylation at Tyr705 and nuclear translocation, while simultaneously regulating the expression of downstream target genes by inhibiting the Wnt/β-catenin signaling pathway. (E)-2-Hydroxycinnamaldehyde possesses antitumor activity and can be used in tumor research.
Targets(IC50)	Apoptosis,Others,Reactive Oxygen Species,STAT,ROS
In vitro	Methods: DU145 prostate cancer cells were treated with 5-40 μM 3-(2-Hydroxyphenyl) -2-propenal for 24-48 h. Cell proliferation was assessed using the WST-1 assay, and STAT3 phosphorylation levels were detected by Western blot. Results: The GI_{50} for DU145 cell proliferation was 20 μM; treatment with 20 μM 3-(2-hydroxyphenyl)-2-propenal for 30 min significantly inhibited STAT3 Tyr705 phosphorylation, with an inhibition rate >70% at 12 h, without altering total STAT3 protein levels.[1] Methods: DU145 cells were treated with 20 μM 3-(2-hydroxyphenyl)-2-propenal for 24-48 h; Western blot analysis was performed to detect STAT3 target gene expression; flow cytometry was used to analyze cell cycle distribution. Results: 3-(2-Hydroxyphenyl)-2-propenal significantly downregulated cell cycle genes (cyclin D1, cyclin A) and anti-apoptotic genes (Bcl-2, Bcl-xL, Mcl-1, survivin); G0/G1 phase arrest began to appear at 6 h, and the proportion of apoptotic cells (sub-G1 peak) significantly increased after 24 h.[1]
In vivo	Methods: Six-week-old female BALB/c nude mice were subcutaneously inoculated with 1×10^6 DU145 cells and randomly assigned to treatment groups. They were administered 3-(2-hydroxyphenyl)-2-propenal orally at a dose of 50 mg/kg, five times a week for 25 consecutive days; Tumor volume and mouse body weight were measured twice weekly; at the end of the study, the mice were euthanized and tumor weight was measured. Results: 3-(2-Hydroxyphenyl)-2-propenal significantly inhibited tumor growth; compared with the control group, tumor volume decreased by 48.4% and tumor weight decreased by 49.5%. There was no significant decrease in mouse body weight during the treatment period, and no significant toxic reactions were observed.[1]

Solubility Information

Solubility	DMSO: 280 mg/mL (1889.85 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	6.7495 mL	33.7473 mL	67.4946 mL
5 mM	1.3499 mL	6.7495 mL	13.4989 mL
10 mM	0.6749 mL	3.3747 mL	6.7495 mL
50 mM	0.135 mL	0.6749 mL	1.3499 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

Yoon YJ, et al. 2'-Hydroxycinnamaldehyde inhibits proliferation and induces apoptosis via signal transducer and activator of transcription 3 inactivation and reactive oxygen species generation. Cancer Sci. 2019 Jan;110(1):366-378.