

Trans-caffeic acid

Chemical Properties

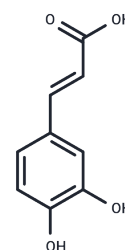
CAS No. : 501-16-6

Formula: C₉H₈O₄

Molecular Weight: 180.16

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	Trans-caffeic acid (3,4-Dihydroxybenzeneacrylic acid) can be used as a highly sensitive fluorescent probe for the detection of laccase in food and can also stimulate the growth of germ tissue.
Targets(IC50)	Others
In vitro	Trans-caffeic acid exhibited antiproliferative effects in human breast cancer cell lines MDA-MB-231 and MCF-7. After treatment with 5, 10, 25, 50, and 100 μ M for 24, 48, and 72 hours, MTT assays showed time- and dose-dependent inhibition. At 50 μ M for 48 hours, Trans-caffeic acid significantly induced cell cycle arrest and apoptosis, accompanied by elevated ROS levels and reduced mitochondrial membrane potential, suggesting involvement of oxidative stress and mitochondrial pathways[1].
In vivo	In BALB/c nude mice bearing MDA-MB-231 xenograft tumors, Trans-caffeic acid was administered intraperitoneally at 25 mg/kg once daily for 21 days. The treatment significantly reduced tumor volume compared to control without observable toxicity. Tumor tissues showed increased Bax and decreased Bcl-2 expression, indicating mitochondrial pathway-mediated apoptosis[1].

Solubility Information

Solubility	DMSO: 80 mg/mL (444.05 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	5.5506 mL	27.7531 mL	55.5062 mL
5 mM	1.1101 mL	5.5506 mL	11.1012 mL
10 mM	0.5551 mL	2.7753 mL	5.5506 mL
50 mM	0.111 mL	0.5551 mL	1.1101 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

Trans-caffeic acid stearyl ester from *Paeonia suffruticosa* inhibits melanin synthesis by cAMP-mediated down-regulation of α -melanocyte-stimulating hormone-stimulated melanogenesis signaling pathway in B16 cells. *Biol Pharm Bull.* 2012;35(12):2198-203.

Photochemical and photocatalytic isomerization of Trans-caffeic acid and cyclization of cis-caffeic acid to esculetin. *Applied Catalysis B Environmental*, 2016, 182 :347-355.

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