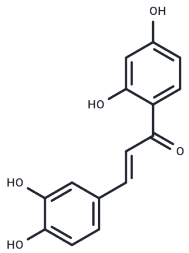
Data Sheet (Cat.No.T6427)

TargetMol

Butein

Chemical Properties



CAS No. : 487-52-5

Formula: C15H12O5

Molecular Weight: 272.25

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Butein is a cAMP-specific PDE inhibitor, protein tyrosine kinase inhibitor, and SIRT1 activator. It sensitizes HeLa cells to Cisplatin by targeting FoxO3a via the AKT and ERK/p38 MAPK pathways.
Targets(IC50)	Apoptosis,EGFR,Autophagy,PDE
In vitro	**METHODS**: HeLa cells were treated with Butein (2',3,4,4'-tetrahydroxy Chalcone) (10, 20, 40 μM) and cisplatin (10, 20, 30 μM), and the cells were evaluated by MTT method and interaction index Toxicity and detect cell apoptosis, and explore the effectiveness of combined treatment with Butein (2',3,4,4'-tetrahydroxy Chalcone) and cisplatin. **RESULTS** Treatment with Butein (2',3,4,4'-tetrahydroxy Chalcone) and cisplatin alone inhibited cell growth in a dose- and time-dependent manner; Butein (2',3,4,4'-tetrahydroxy Chalcone) at 20 μM Chalcone) and 20 μM cisplatin combined treatment for 48 h induced a significant synergistic cytotoxic effect; the combination of the two drugs could significantly enhance cell apoptosis. [3] **METHODS**: HeLa cells were treated with Butein (2',3,4,4'-tetrahydroxy Chalcone) (20 μM) or cisplatin (20 μM), and Western blot analysis was performed to detect the phosphorylation levels of AKT, ERK and p38. **RESULTS** Butein (2',3,4,4'-tetrahydroxy Chalcone) significantly inhibited cisplatin-induced ERK and p38 phosphorylation, but had a significant effect on JNK expression; cisplatin or Butein (2',3, 4,4'-tetrahydroxy Chalcone) or combined use can inhibit AKT activation. [3]
In vivo	**METHODS**: Nude mice bearing Hela cell models were treated with Butein (2',3,4,4'-tetrahydroxy Chalcone) (2 mg/kg, intraperitoneally injected every two days) or Butein (2',3,4,4'-tetrahydroxy Chalcone) (2 mg/kg, intraperitoneally injected every two days) and cisplatin (2 mg/kg, intraperitoneally injected every 2 days) for 3 weeks, and the body weight and clinical symptoms of the mice were measured every other day; the effect of Butein (2',3,4,4'-tetrahydroxy Chalcone) on the expression level of FoxO3a in tumor tissues was further evaluated by immunohistochemical staining. **RESULTS** The combined treatment (Butein (2',3,4,4'-tetrahydroxy Chalcone) + cisplatin) had the most significant effect on tumor volume, while no significant difference was observed in body weight between control mice and mice treated with cisplatin alone or both drugs; the expression of FoxO3a was significantly increased in mice treated with Butein (2',3,4,4'-tetrahydroxy Chalcone.[3]

Cell Research	The cells (5× 103/mL) are incubated in triplicate in a 96-well plate in the presence or absence of indicated concentration of Butein in a final volume of 0.2 mL for different time intervals at 37 ℃. Thereafter, 20 μL MTT solution (5 mg/mL in PBS) is added to each well. After a 2-hour incubation at 37 ℃, 0.1 mL lysis buffer (20% SDS, 50% dimethylformamide) is added, incubation is continued overnight at 37 ℃, and then the optical density at 570 nm is measured by plate reader. (Only for Reference)

Solubility Information

Solubility	DMSO: 51 mg/mL (187.33 mM),Sonication is recommended. Ethanol: 51 mg/mL (187.33 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.6731 mL	18.3655 mL	36.7309 mL
5 mM	0.7346 mL	3.6731 mL	7.3462 mL
10 mM	0.3673 mL	1.8365 mL	3.6731 mL
50 mM	0.0735 mL	0.3673 mL	0.7346 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.

Reference

Yang EB, et al. Butein, a specific protein tyrosine kinase inhibitor. Biochem Biophys Res Commun. 1998 Apr 17;245 (2):435-8.
Zhao L, Zhang W, Luan F, et al.Butein suppresses PD-L1 expression via downregulating STAT1 in non-small cell lung cancer.Biomedicine & Pharmacotherapy.2023, 157: 114030.
Yu SM, et al. Endothelium-dependent relaxation of rat aorta by butein, a novel cyclic AMP-specific phosphodiesterase inhibitor. Eur J Pharmacol. 1995 Jun 23;280(1):69-77.
Zhang L,et al. Butein sensitizes HeLa cells to cisplatin through the AKT and ERK/p38 MAPK pathways by targeting FoxO3a. Int J Mol Med. 2015 Oct;36(4):957-66.
Zhang L, et al. FEBS Lett, 2008, 582(13), 1821-1828.
Rajendran P, et al. Clin Cancer Res, 2011, 17(6), 1425-1439.
Zhang L, et al. Butein sensitizes HeLa cells to cisplatin through the AKT and ERK/p38 MAPK pathways by targeting FoxO3a.Int J Mol Med. 2015 Oct;36(4):957-66.