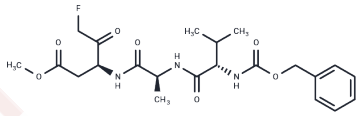
Data Sheet (Cat.No.T6013)

TargetMol

Z-VAD(OMe)-FMK

Chemical Properties



CAS No. : 187389-52-2

Formula: C22H30FN3O7

Molecular Weight: 467.49

Storage: Store at low temperature,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	Z-VAD(OMe)-FMK is a pan-caspase inhibitor with irreversible properties; Z-VAD(OMe)-FMK is also an inhibitor of ubiquitin C terminal hydrolase L1 (UCHL1), which is irreversibly modified by targeting the UCHL1 active site.
Targets(IC50)	Caspase
In vitro	**METHODS**: Human leukemia cells HL60 were treated with Z-VAD(OMe)-FMK (50 μM) and camptothecin (50 M) for 3 h. Cell morphology was observed by electron microscopy. **RESULTS**: Cells treated with camptothecin exhibited typical apoptotic features including cell shrinkage, chromatin condensation and nuclear fragmentation.Z-VAD(OMe)-FMK combination treatment eliminated the camptothecin-induced apoptotic pattern. Z-VAD (OMe)-FMK alone did not affect cell morphology. [1] **METHODS**: Cholangiocarcinoma cells KKU100, KKU213A and KKU213B were pretreated with Z-VAD(OMe)-FMK (20 μM) for 1 h, followed by CH-MSCs (0%, 50% and 75%) for 24 h. Apoptosis was detected using Flow Cytometry. **RESULTS**: Z-VAD(OMe)-FMK pretreatment prevented the apoptosis induced by CH-MSCs. [2] **METHODS**: Human ovarian teratoma cells PA-1 were treated with Z-VAD(OMe)-FMK (50 μM) and UVB (100 J/m2) for 16 h, and the expression levels of target proteins were detected by Western Blot. **RESULTS**: Z-VAD(OMe)-FMK eliminated PARP cleavage induced by UVB. [3]
In vivo	**METHODS**: To investigate whether in vivo administration of Z-VAD(OMe)-FMK prevents infection-induced preterm labor, a single intraperitoneal injection of Z-VAD(OMe)-FMK (10 mg/kg) was administered to CD1 mice in which preterm labor was induced by heat-killed group B streptococcus (HK-GBS). **RESULTS**: Z-VAD(OMe)-FMK pretreatment delayed but did not prevent HK-GBS-induced preterm labor in a pregnant mouse model. [4] **METHODS**: To prevent LPS-induced acute lung injury, Z-VAD(OMe)-FMK (0.25 mg 15 min before LPS stimulation, 0.1 mg three times per hour) was injected intravenously into ICR mice with LPS-induced apoptosis and acute lung injury. **RESULTS**: Z-VAD(OMe)-FMK inhibited caspase-3 activity in lung tissues. Z-VAD(OMe)-FMK significantly prolonged the survival of mice. Apoptosis may play an important role in acute lung injury, and thus inhibition of caspase activity may provide a new

In vivo	therapeutic approach for the treatment of this disease. [5]
Cell Research	The human monocytic tumour cell line, THP.1 and the leukaemic T-cell line, Jurkat (clone E-6) were maintained in RPMI 1640 supplemented with 10% (v/v) heat-inactivated fetal calf serum, 100 units/ml penicillin and 100 μg/ml streptomycin in an atmosphere of 5% CO2 in air at 37 °C. The cells were maintained in logarithmic growth phase by routine passage every 2–3 days. To induce apoptosis in THP.1 cells, 2×10^6 cells/ml were incubated either alone or in the presence of cycloheximide (25 μM) and TLCK (100 μM) as previously described. In order to assess the possible effects of various ICE-like protease inhibitors, THP.1 cells were also pretreated for 1 h with Z-VAD.FMK (10 μM), Ac-DEVD-CHO (20 μM) and Ac-YVAD-CHO (20 μM) before being exposed to the apoptotic stimulus. To induce apoptosis in Jurkat cells, 2×10^6 cells/ml were stimulated with 200 ng/ml anti-human Fas as described previously [1].
Animal Research	Mice used in this study were 5- to 6-week-old (20 to 22 g) ICR males. Mice were injected with 30 mg/kg LPS from E. coli serotype O111:B4 through the tail vein. Z-VAD.fmk was dissolved at 2 mg/ml in 1% dimethyl sulfoxide in sterile saline, and administered to mice by the method of Rodriguez et al. A single intravenous injection of Z-VAD.fmk (0.25 mg) was made 15 minutes before LPS injection, followed by three intravenous injections of Z-VAD.fmk (0.1 mg each) per hour. Control mice were injected with the same volume of 1% DMSO in sterile saline [4].

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 126.25 mg/mL (270.06 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4.5 mg/mL (9.63 mM),Solution. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1391 mL	10.6954 mL	21.3908 mL
5 mM	0.4278 mL	2.1391 mL	4.2782 mL
10 mM	0.2139 mL	1.0695 mL	2.1391 mL
50 mM	0.0428 mL	0.2139 mL	0.4278 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

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