

Z-VAD-FMK, inhibitor

Z-VAD-FMK

CATALOG #
AAA14581

PRODUCT SYNONYMS

Z-VAD-FMK; inhibitor

PRODUCT SPECIFICATIONS

Purity/Purification	99.41%
Form/Format	Solid
CAS	187389-52-2
Solubility	H ₂ O: 1mg/ml Ethanol: <1mg/ml DMSO: 93 mg/mL (198.93mM) (<1mg/ml refers to the product slightly soluble or insoluble).
Animal Model	Mice
Targets(IC ₅₀)	Caspase
Analytical Data	HNMR and HPLC: Consistent with Structure
In vitro	Z-VAD.FMK was a poor inhibitor of PARP protease activity in cell lysates. Z-VAD.FMK (10 ?M) is a potent inhibitor of Fas-induced apoptosis [1]. CPP32 is activated during camptothecin-induced apoptosis, and Z-VAD-fmk blocks all features of apoptosis. However, Z-VAD-fmk is inactive in a cell-free system reconstituted from nuclei of untreated HL60 cells and cytosol from camptothecin-treated cells [2]. z-VAD-FMK suppressed TUNEL and caspase-3 staining in endothelial cells, decreased caspase-3 activation, reduced BBB permeability, relieved vasospasm, abolished brain edema, and improved neurological outcome [3]
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].
Formula	C ₂₂ H ₃₀ FN ₃ O ₇
Preparing Stock Solutions	1mg;5mg;10mg 1mM 2.1391; 10.6954; 21.3908 5mM 0.4278; 2.1391; 4.2782 10mM 0.2139; 1.0695; 2.1391 50mM 0.0428; 0.2139; 0.4278 *Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution : -80°C for 1 month. Please use it as soon as possible.

In Vivo Activity	LPS (30 mg/kg) was administered intravenously to Institute for Cancer Research mice. Z-VAD.fmk was injected before and after the administration of LPS. The injection of Z-VAD.fmk suppressed the caspase-3 activity in lung tissues and significantly decreased the number of terminal dUTP nick-end labeling-positive cells [4]. Treatment with the specific caspase inhibitor Z-VAD-FMK (i.p.) prior to heat-killed group B streptococcus (i.p.) delayed but did not prevent preterm delivery [5]
In vitro	In vitro Z-VAD.FMK was a poor inhibitor of PARP protease activity in cell lysates. Z-VAD.FMK (10 μ M) is a potent inhibitor of Fas-induced apoptosis [1]. CPP32 is activated during camptothecin-induced apoptosis, and Z-VAD-fmk blocks all features of apoptosis. However, Z-VAD-fmk is inactive in a cell-free system reconstituted from nuclei of untreated HL60 cells and cytosol from camptothecin-treated cells [2]. z-VAD-FMK suppressed TUNEL and caspase-3 staining in endothelial cells, decreased caspase-3 activation, reduced BBB permeability, relieved vasospasm, abolished brain edema, and improved neurological outcome [3].
Cell Research	Z-VAD-FMK is dissolved in DMSO and stored, and then diluted with appropriate medium before use[3]. PCR products containing coding sequences for the dSMN (forward primer: 5'-TAA TAC GAC TCA CTA TAG GG AAG ACG TAC GAC GAGTCG-3'; and reverse primer: 5'-TAA TAC GAC TCA CTA TAG GG GTG GTG CTG GCT TCT TTC-3'; product length, 601bps; bold and italics letters represent T7 promoter sequences) and control Drosophila Presenilin (dPsn) gene (forward primer: 5'-TAA TAC GAC TCA CTA TAG GG TG GCT GCT GTC AAT CTC-3'; and reverse primer: 5'-TAA TAC GAC TCA CTA TAG GGCGA TAG CAA CGC TTC TTG-3'; product length: 543bps) are obtained and gel-purified. Double-stranded RNAs (dsRNA) are generated by transcription with Ribomax T7 Transcription kit and digested with Rnase-free DNase. The dsRNA products are ethanol precipitated and annealed by incubation at 65°C for 30 min and then slowly allowed to cool at room temperature. The annealed dsRNA products are analyzed on a 1% agarose gel to ensure the majority of dsRNA existed as a single band. The dsRNA (2 μ g) and/or plasmid DNAs (2 μ g) are introduced into cells by using Cellfectin. Caspase inhibition is achieved by using 50 μ M of Z-VAD-FMK in the culture medium[3].
Targets(IC50)	Pan-caspase: None
Preparation and Storage	Store at 0 to 4°C for short term (days to weeks) For long term storage, store at -20°C (months)

IMAGES

