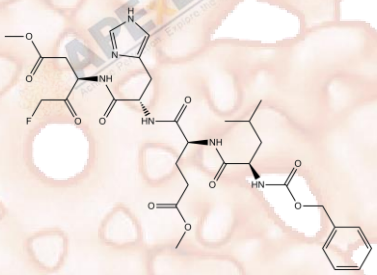
Product Data Sheet

Z-LEHD-FMK



Cat. No.:	B3233
CAS No.:	210345-04-3
Formula:	C32H43FN6O10
M.Wt:	690.72
Synonyms:	
Target:	Apoptosis
Pathway:	Caspase
Storage:	Store at -20°C

Solvent & Solubility

In Vitro

insoluble in H2O; ⩾107.4 mg/mL in DMSO; ⩾98.2 mg/mL in EtOH

Preparing Stock Solutions

Mass / Solvent / Concentration	1mg	5mg	10mg
1 mM	1.4478 mL	7.2388 mL	14.4776 mL
5 mM	0.2896 mL	1.4478 mL	2.8955 mL
10 mM	0.1448 mL	0.7239 mL	1.4478 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary	Irreversible Caspase-9 inhibitor.
IC_{50} & Target	

In Vitro

Cell Viability Assay

Cell Line:	Human colon cancer, HCT116, human embryonic fibroblastand 293 cell lines
Preparation method:	Soluble in DMSO > 10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Reacting conditions:	20 μM Z-LEHD-FMK for 30 mins followed by 20ng/ml TRAIL for 4 hours

	Applications:	Z-LEHD-FMK completely protects HCT116 and 293 cells from TRAIL-induced toxicity. Z-LEHD-FMK also protected human hepatocytes from TRAIL-induced apoptosis. The colony growth of HCT116 is reduced in the presence of TRAIL, and there are significantly more colonies present when the HCT116 cells were incubated in the presence of TRAIL and Z-LEHD-FMK.
In Vivo	**Animal experiment**	
	Animal models:	Adult male Wistar albino rats, 250 to 350 g, spinal cord injury model
	Dosage form:	Intravenous 0.8-mM/kg injection of z-LEHD-fmk.
	Applications:	At 24 hours post-injury, the mean apoptotic cell count in trauma-only controls was significantly higher than that in z-LEHD-fmk–treated group. Electron microscopy results also show Z-LEHD-FMK treatment protected neurons, glia, myelin, axons, and intracellular organelles. The specimens treated with z-LEHD-fmk displays significantly fewer apoptotic cells and diminished axonal demyelination.
	Preparation method:	Dry-form z-LEHD-fmk was dissolved in dimethylsulfoxide prepared with phosphatebuffered saline.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

1. Yazhong Ge, Qing Gao, et al . "Su Yang Decoction induces human colon carcinoma cell apoptosis by activating caspases." Oncology letters.October 26, 2018.

2. Gan I, Jiang J, et al. "Mitochondrial permeability regulates cardiac endothelial cell necroptosis and cardiac allograft rejection." Am J Transplant. 2018 Sep 11.PMID:30203531

3.Song F, Yu X, et al. "Caspase-3 Inhibition Attenuates the Cytopathic Effects of EV71 Infection. Front Microbiol." 2018 Apr 26;9:817.PMID:29755438

4. Wang JN, Zhang ZR, et al. "Acetyl-macrocalin B, an ent-kaurane diterpenoid, initiates apoptosis through the ROS-p38-caspase 9-dependent pathway and induces G2/M phase arrest via the Chk1/2-Cdc25C-Cdc2/cyclin B axis in non-small cell lung cancer." Cancer Biol Ther. 2018 Jul 3;19(7):609-621.PMID:29565730

5. Wang J, Zhang Z, et al. "Rabdocoestin B exhibits antitumor activity by inducing G2/M phase arrest and apoptosis in esophageal squamous cell carcinoma." Cancer Chemother Pharmacol. 2018 Mar;81(3):469-481.PMID:29308536

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References

1. Ozoren N, Kim K, Burns TF, et al. The caspase 9 inhibitor Z-LEHD-FMK protects human liver cells while permitting death of cancer cells exposed to tumor necrosis factor-related apoptosis-inducing ligand. Cancer Res, 2000, 60(22): 6259-6265.

2. Colak A, Karao lan A, Barut S, et al. Neuroprotection and functional recovery after application of the caspase-9 inhibitor z-LEHD-fmk in a rat model of traumatic spinal cord injury. J Neurosurg Spine, 2005, 2(3): 327-334.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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