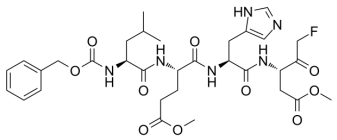
Z-LEHD-FMK

Cat. No.:	HY-P1010
CAS No.:	210345-04-3
Molecular Formula:	$C_{32}H_{43}FN_6O_{10}$
Molecular Weight:	690.72
Target:	Caspase; Apoptosis
Pathway:	Apoptosis
Storage:	Sealed storage, away from moisture Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (144.78 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	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

Description

Z-LEHD-FMK is a selective and irreversible inhibitor of caspase-9, protects against lethal reperfusion injury and attenuates apoptosis. Z-LEHD-FMK exhibits the neuroprotective effect in a rat model of spinal cord trauma[1][2][3].

IC_{50} & Target

Caspase-9

In Vitro

Z-LEHD-FMK (20 μM; pretreated for 30 min) completely protects HCT116 and 293 cells from TRAIL-induced toxicity[1].
Z-LEHD-FMK (20 μM ; 6 h) protects normal human hepatocytes from TRAIL-induced apoptosis[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Apoptosis Analysis[1]

Cell Line:	SW480, H460, HCT116 and 293 cells
Concentration:	20 μM
Incubation Time:	Pretreated for 30 min

Result:	Protected HCT116 and 293 cells from TRAIL-induced apoptosis.

Western Blot Analysis[1]

Cell Line:	HCT116, SW480 cells
Concentration:	20 μM
Incubation Time:	2 h
Result:	Protected procaspase 3 from cleavage in HCT116 cells but not in SW480 cells, especially at the 16-h time point.

In Vivo

Z-LEHD-FMK (0.8 μmol/kg; i.v. for 7 d) protects neurons, glia, myelin, axons, and intracellular organelles in spinal cord injury (SCI) rats[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Wistar albino rats (250-350 g) with SCI[2]
Dosage:	0.8 μmol/kg
Administration:	I.v. for 1 or 7 days
Result:	Decreased the mean apoptotic cell count at 24 hours and 7 days postinjury.

CUSTOMER VALIDATION

- Oxid Med Cell Longev. 26 Jun 2022.
- Food Chem Toxicol. 2020 Dec;146:111843.
- Food Chem Toxicol. 2019 Oct;132:110655.
- Food Chem Toxicol. 2018 Oct;120:143-154.
- J Cell Mol Med. 2020 Jul;24(14):8151-8165.

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REFERENCES

[1]. Ozoren N, 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 Nov 15; 60(22): 6259-65.

[2]. Colak A, 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 Mar; 2(3): 327-34.

[3]. Mocanu MM, et, al. Caspase inhibition and limitation of myocardial infarct size: protection against lethal reperfusion injury. Br J Pharmacol. 2000 May; 130(2): 197-200.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA