Z-YVAD-FMK

Cat. No.: HY-P1009

CAS No.: 210344-97-1

Molecular Formula: $C_{31}H_{39}FN_4O_9$

Molecular Weight: 630.66

Sequence: Z-Tyr-Val-Ala-Asp-FMK

Sequence Shortening: Z-YVAD-FMK

Target: Caspase

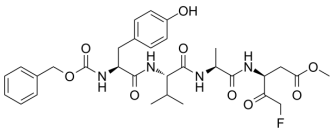
Pathway: Apoptosis

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 : 125 mg/mL (198.21 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.5856 mL	7.9282 mL	15.8564 mL
	5 mM	0.3171 mL	1.5856 mL	3.1713 mL
	10 mM	0.1586 mL	0.7928 mL	1.5856 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (3.30 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (3.30 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.30 mM); Clear solution

BIOLOGICAL ACTIVITY

Description Z-YVAD-FMK is a cell-permeable caspase-1 and -4 inhibitor with anti-inflammatory and anti-tumor activities[1].

IC_{50} & Target Caspase

In Vitro Z-YVAD-FMK (100 μM; 24 hours) significantly downregulated the growth inhibition induced by butyrate in Caco-2 cells[1].

Z-YVAD-FMK (20 μM; pre 1 hour; 24 hours) attenuates the apoptotic induction of III-10 on both HepG2 and BEL-7402 cells, the apoptotic rate of -10 on HepG2 cells is reduced by Z-VAD-FMK from 19.88% to 8.34%, while that on BEL-7402 cells is reduced from 17.56% to 11.98%[4].

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

Cell Viability Assay[1]

Cell Line:	Caco-2 cells
Concentration:	0-100 μM
Incubation Time:	24 hours
Result:	Inhibited Caco-2 cells growth.

Apoptosis Analysis[1]

Cell Line:	BEL-7402 and HepG2 cells
Concentration:	20 μM
Incubation Time:	Pre 1 hour; 24 hours
Result:	Induced a caspase-dependent apoptosis in cells.

CUSTOMER VALIDATION

- Nat Biomed Eng. 2023 Mar;7(3):281-297.
- Sci Transl Med. 2023 Jan 11;15(678):eabl7895.
- J Allergy Clin Immunol. 2022 Mar 26;S0091-6749(22)00382-7.
- J Hazard Mater. 2021 Jan 13;411:125134.
- Biomed Pharmacother. 2022 Jul;151:113098.

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REFERENCES

[1]. Li H1,et al.Aluminum hydroxide adjuvants activate caspase-1 and induce IL-1beta and IL-18 release.J Immunol. 2007 Apr 15;178(8):5271-6.

[2]. Avivi-Green C, et al. Different molecular events account for butyrate-induced apoptosis in two human colon cancer cell lines.J Nutr. 2002 Jul;132(7):1812-8.

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