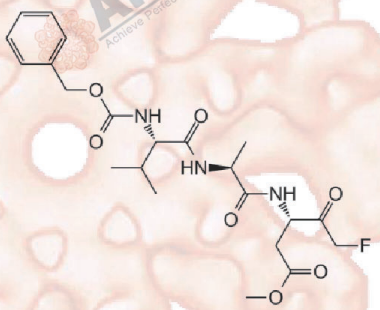
Product Data Sheet

Z-VAD-FMK



Cat. No.: A1902

CAS No.: 187389-52-2

Formula: C22H30FN3O7

M.Wt: 467.49

Synonyms: Benzyloxycarbonyl-Val-Ala-Asp(OMe)-fluoro methylketone,Z-Val-Ala-Asp(OMe)-FMK

Target: Apoptosis

Pathway: Caspase

Storage: Store at -20°C

Solvent & Solubility

In Vitro

≥23.37 mg/mL in DMSO; insoluble in EtOH; insoluble in H2O

Preparing Stock Solutions

Concentration \ Solvent \ Mass	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

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

Biological Activity

Shortsummary	Cell-permeable, irreversible pan-caspase inhibitor
IC_{50} & Target	0.0015 - 5.8 mM (Caspase)

In Vitro

Cell Viability Assay

Cell Line:	Human CD4+ (~ 97%) and CD8+ T (~ 98%) cells
Preparation method:	The solubility of this compound in DMSO is >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:	24 h
	Applications:	Z-VAD-FMK dose-dependently inhibited T cell proliferation mediated through the co-stimulation with anti-CD3 and anti-CD28. Z-IETD-FMK was less effective at 25 and 50 μM, but inhibited T cell proliferation at the 100 μM concentration.
In Vivo	**Animal experiment**	
	Animal models:	C57BL mice
	Dosage form:	1.25 mM, ear provocation
	Applications:	The right ear swelling degree, weight differences and thickness between two ears in the 1.25 mML Z-VAD-FMK group were significantly lower than those of the negative control (NC). The levels of INF-γ and IL-2 in the ear skin lesions, the mean intensity of BrdU in T lymphocytes, and the percent of activation markers-positive T lymphocytes were all lower than those of NC.
	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.Yue W, Verhoeven C, et al. "Pro-Apoptotic Effects of Estetrol on Long-Term Estrogen-Deprived Breast Cancer Cells and at Low Doses on Hormone-Sensitive Cells." Breast Cancer (Auckl). 2019 May 15;13:1178223419844198.PMID:31205415

2.Patel S, Webster JD, et al. "RIP1 inhibition blocks inflammatory diseases but not tumor growth or metastases." Cell Death Differ. 2019 May 17.PMID:31101885

3.Jung H, Leal-Ekman JS, et al. "Atg14 protects the intestinal epithelium from TNF-triggered villus atrophy." Autophagy. 2019 Mar 20:1-12.PMID:30894050

4. Podder B, Guttà C, et al. "TAK1 suppresses RIPK1-dependent cell death and is associated with disease progression in melanoma." Cell Death Differ. 2019 Mar 8.PMID:30850732

5. Rello-Varona S, Fuentes-Guirado M, et al. "Bcl-x(L) inhibition enhances Dinaciclib-induced cell death in soft-tissue sarcomas." Sci Rep. 2019 Mar 7;9(1):3816.PMID:30846724

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References

[1]. Slee EA1, Zhu H, Chow SC et al. Benzyloxycarbonyl-Val-Ala-Asp (OMe) fluoromethylketone (Z-VAD.FMK) inhibits apoptosis by blocking the processing of CPP32. Biochem J. 1996 Apr 1;315 (Pt 1):21-4.

[2]. Lawrence CP1, Chow SC. Suppression of human T cell proliferation by the caspase inhibitors, z-VAD-FMK and z-IETD-FMK is independent of their caspase inhibition properties. Toxicol Appl Pharmacol. 2012 Nov 15;265(1):103-12.

[3]. Li YY, Yan CL. Inhibition of elicitation of allergic contact dermatitis by topical use of Z-VAD-FMK, a broad caspase inhibitor: experiment in mice. Zhonghua Yi Xue Za Zhi. 2012 Jul 24;92(28):1992-6.

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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