Product Name: Z-VAD-FMK

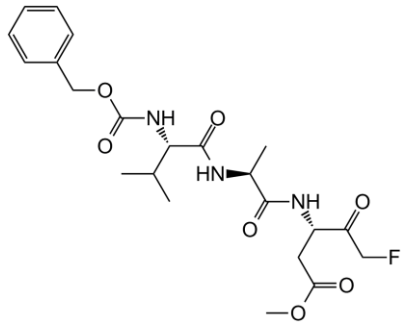
Revision Date: 6/30/2016

Product Data Sheet

Chemical Properties

Product Name: Z-VAD-FMK

Cas No.: 187389-52-2



M.Wt: 467.49

Formula: C22H30FN3O7

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

Chemical Name: methyl (3S)-5-fluoro-3-[[(2S)-2-[[(2S)-3-methyl-2-(phenylmethoxycarbonylamino)butanoyl]amino]propanoyl]amino]-4-oxopentanoate

Canonical SMILES: CC(C)C(C(=O)NC(C)C(=O)NC(CC(=O)OC)C(=O)CF)NC(=O)OCC1=CC=CC=C1

Solubility: >23.4mg/mL in DMSO

Storage: Store at -20°C

General tips: For obtaining a higher solubility , please warm the tube at 37° C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20° C for several months.

Shopping Condition: Evaluation sample solution : ship with blue ice
All other available size: ship with RT , or blue ice upon request

Biological Activity

Targets : Caspase

Pathways: Apoptosis >> Caspase

Description:

Z-VAD-FMK, an inhibitor of ICE-like proteases, inhibits apoptosis in THP.1 cells induced by diverse stimuli1 and Fas antigen-induced apoptosis in Jurkat T-cells2. It inhibits apoptosis by blocking the activation of proCPP32 into its active form, rather than by preventing the proteolytic action of

CPP32 directly.
Z- VAD-FMK inhibits the formation of large kilobasepair fragments of DNA induced by diverse stimuli. Z-VAD-FMK had little or no effect on STS-induced necrotic cell death suggesting that the ICE-like protease activity was not involved in necrosis3.
Z-VAD-FMK almost completely inhibited the formation of large kilobasepair induced by all four stimuli. Similarly Z-VAD-FMK almost completely inhibited the enhanced formation of large kilobasepair fragments induced by thapsigargin or cycloheximide in the presence of TLCK, in good agreement with its ability to inhibit apoptosis induced by these treatments. These stimuli also induced internucleosomal cleavage of DNA, which was inhibited by Z-VAD-FMK. These results suggested that an ICE-like protease(s) acts at a stage prior to the formation of large kilobasepair fragments of DNA3.

***Reference**:*

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2. Chow, S. C., Weis M., Kass, G. E. N., Holmstrom, T. H., Eriksson, J. E. and Orrenius S. (1995) FEBS Lett. 364, 134±138
3. H. Zhu et al./FEBS Letters 374 (1995) 303-308

Protocol

Cell experiment:

Cell lines	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.

Animal experiment [3]:

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.

***Reference**:*
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[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.

Product Citations

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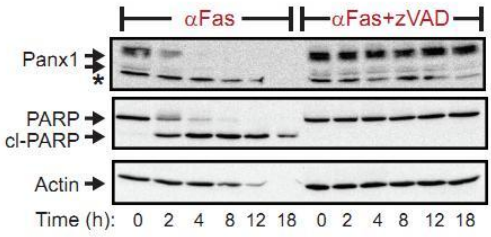
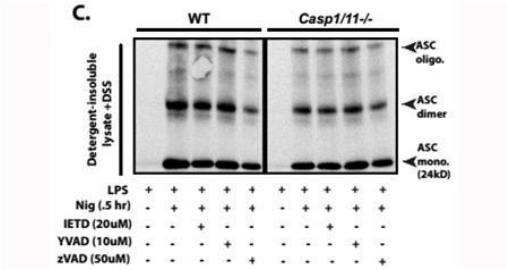
Product Validation



zVAD was able to completely suppress the proteolytic processing of Panx1 at each incubation time point in the anti-Fas treated Jurkat cells [1].

1. Boyd-Tressler A, Penuela S, Laird D W, et al. Chemotherapeutic Drugs Induce ATP Release via Caspase-gated Pannexin-1 Channels and a Caspase/Pannexin-1-Independent Mechanism. Journal of Biological Chemistry, 2014: jbc. M114. 590240.



Detergent-insoluble lysate fractions were cross-linked with DSS,and ASC oligomerization was assayed in WT and Casp1/11-/-BMDC stimulated with LPS alone (5 h) pius 30 min nigericin in the presence or absence of IETD (20 μM),YVAD(10 μM),and zVAD(50 μM).

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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