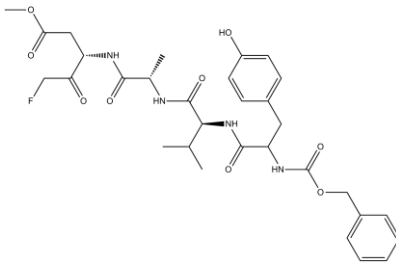


## Product Data Sheet

### Chemical Properties

<b>Product Name:</b>	Z-YVAD-FMK	
<b>Cas No.:</b>	N/A	
<b>M.Wt:</b>	630.66	
<b>Formula:</b>	C31H39FN4O9	
<b>Chemical Name:</b>	(8S,11S,14S)-methyl 14-(2-fluoroacetyl)-5-(4-hydroxybenzyl)-8-isopropyl-11-methyl-3,6,9 ,12-tetraoxo-1-phenyl-2-oxa-4,7,10,13-tetraazahexadecan-16-oate	
<b>Canonical SMILES:</b>	<chem>COC(C[C@H])(NC([C@H](C)NC([C@@H])(NC(C(CC1=CC=C(O)C=C1)NC(OCC2=CC=CC=C2)=O)=O)C(C)C)=O)C(CF)=O)=O</chem>	
<b>Solubility:</b>	>31.6mg/mL in DMSO	
<b>Storage:</b>	Store at -20°C	
<b>General tips:</b>	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.	
<b>Shopping Condition:</b>	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request	

### Biological Activity

<b>Targets :</b>	Caspase
<b>Pathways:</b>	Apoptosis >> Caspase
<b>Description:</b>	

Z-YVAD-FMK is a potent cell-permeable and irreversible inhibitor of caspase-1. In Caco-2 cells, Z-YVAD-FMK significantly decreased the growth inhibition induced by butyrate. Complete abrogation of butyrate's effect occurred at an inhibitor concentration of 100 mol/L. It is indicated that caspase-1 inhibitor significantly alters the caspase cascade, diminishing the butyrate-induced apoptotic effect [1]. After treated with Alum reflected caspase-1 activation, IL-1-release in cells was blocked by Z-YVAD-FMK. This effect was observed even in

MyD88-deficient bone marrow DC [2].

**Reference:**

1. Avivi-Green C, Polak-Charcon S, Madar Z, 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.
2. Li H, Nookala S, Re F. Aluminum hydroxide adjuvants activate caspase-1 and induce IL-1beta and IL-18 release. *J Immunol.* 2007 Apr 15;178(8):5271-6.

## Protocol

### Cell experiment:

Cell lines	Caco-2 (ATCC Number HTB-37)
Preparation method	Limited solubility. 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	48 h
Applications	Z-YVAD-FMK significantly downregulates the growth inhibition induced by butyrate in Caco-2 Cells. Complete abrogation of butyrate's effect occurs at an inhibitor concentration of 100 µmol/L, indicating that caspase-1 inhibitor significantly alters the caspase cascade, diminishing the butyrate-induced apoptotic effect

### Animal experiment [3]:

Animal models	Albino Wistar rats
Dosage form	Rats were injected intravenously (2 µL) with caspase inhibitor Z-VAD-FMK (1.06 mM in 2% DMSO)
Applications	Immediately before exposure to damaging light, YVAD significantly reduces caspase-1 activity to 51% ± 34% but has no effect on caspase-3 activity (98% ± 5%). Exposed-YVAD retinas showed caspase-1 activities of 66% ± 33%, respectively. These values were significantly (P < 0.02 and P < 0.004, respectively) lower than in the Exposed-DMSO group.
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:**

1. Avivi-Green C, Polak-Charcon S, Madar Z, Schwartz B. Different molecular events account for butyrate-induced apoptosis in two human colon cancer cell lines. *J Nutr.* 2002 Jul;132(7):1812-8.
2. Perche O, Doly M, Ranchon-Cole I. Caspase-dependent apoptosis in light-induced retinal degeneration. *Invest Ophthalmol Vis Sci.* 2007 Jun;48(6):2753-9.

**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. Short-term 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.*

**ApexBio Technology**

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