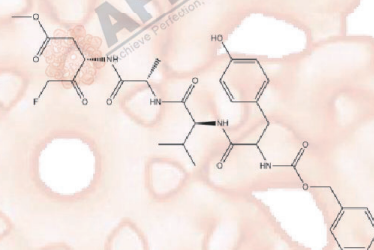


## Product Data Sheet

### Z-YVAD-FMK

<b>Cat. No.:</b>	A8955
<b>CAS No.:</b>	210344-97-1
<b>Formula:</b>	C <sub>31</sub> H <sub>39</sub> FN <sub>4</sub> O <sub>9</sub>
<b>M.Wt:</b>	630.66
<b>Synonyms:</b>	
<b>Target:</b>	Apoptosis
<b>Pathway:</b>	Caspase
<b>Storage:</b>	Store at -20°C



### Solvent & Solubility

≥31.55 mg/mL in DMSO; insoluble in H<sub>2</sub>O; insoluble in EtOH

In Vitro	Preparing Stock Solutions	Mass			
		Solvent	1mg	5mg	10mg
		Concentration			
		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

### Biological Activity

Shortsummary	Caspase-1 inhibitor	
IC <sub>50</sub> & Target		
In Vitro	<b>Cell Viability Assay</b>	
	Cell Line:	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 $\mu\text{mol/L}$ , indicating that caspase-1 inhibitor significantly alters the caspase cascade, diminishing the butyrate-induced apoptotic effect.
In Vivo	<b>Animal experiment</b>	
	Animal models:	Albino Wistar rats
	Dosage form:	Rats were injected intravenously (2 $\mu\text{L}$ ) 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 $51\% \pm 34\%$ but has no effect on caspase-3 activity ( $98\% \pm 5\%$ ). Exposed-YVAD retinas showed caspase-1 activities of $66\% \pm 33\%$ , 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.

## Product Citations

1. Dong X, Zheng Z, et al. "ACPs promote IL-1 $\beta$  production in rheumatoid arthritis by activating the NLRP3 inflammasome." Cell Mol Immunol. 2019 Mar 25. PMID:30911117
2. Chou X, Ding F, et al. "Sirtuin-1 ameliorates cadmium-induced endoplasmic reticulum stress and pyroptosis through XBP-1s deacetylation in human renal tubular epithelial cells. Arch Toxicol." 2019 Feb 22. PMID:30796460
3. Hua S, Ma M, et al. "Glycyrrhizin attenuates hepatic ischemia-reperfusion injury by suppressing HMGB1-dependent GSDMD-mediated kupffer cells pyroptosis." Int Immunopharmacol. 2019 Mar;68:145-155. PMID:30634142
4. Yang D, Zheng X, et al. "Sensing of cytosolic LPS through casp2 pyrin domain mediates noncanonical inflammasome activation in zebrafish." Nat Commun. 2018 Aug 3;9(1):3052. PMID:30076291
5. Fanfan Xu, Xinghua Qiu, et al. "Effects on IL-1b signaling activation induced by water and organic extracts of fine particulate matter (PM2.5) in vitro" Environmental Pollution 237 (2018) 592e600. PMID:29525626

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## References

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. 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.



**APExBIO Technology**

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