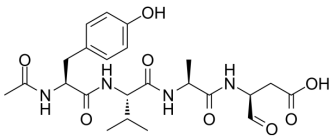
Ac-YVAD-CHO

Cat. No.:	HY-120019
CAS No.:	143313-51-3
Molecular Formula:	$C_{23}H_{32}N_4O_8$
Molecular Weight:	492.52
Sequence Shortening:	Ac-YVAD-CHO
Target:	Interleukin Related; Apoptosis; Caspase
Pathway:	Immunology/Inflammation; 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

H_2O : ≥ 50 mg/mL (101.52 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
	1 mM	2.0304 mL	10.1519 mL	20.3037 mL
	5 mM	0.4061 mL	2.0304 mL	4.0607 mL
	10 mM	0.2030 mL	1.0152 mL	2.0304 mL

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

BIOLOGICAL ACTIVITY

Description

Ac-YVAD-CHO (L-709049) is a potent, reversible, specific tetrapeptide interleukin-lβ converting enzyme (ICE) inhibitor with mouse and human K_i values of 3.0 and 0.76 nM. Ac-YVAD-CHO is also a caspase-1 inhibitor. Ac-YVAD-CHO can suppress the production of mature IL-lβ[1][2][3].

IC_{50} & Target		
	IL-1β	Caspase-1

In Vitro

Ac-YVAD-CHO inhibits mouse and human IL-1β with IC_{50} values of 2.5 and 0.7 μM respectively[1].

Ac-YVAD-CHO (0.01-100 μM) reduces the elevations of IL-lβ in the plasma and peritoneal fluid treated with LPS[1].

Ac-YVAD-CHO (15.6 μM) reduces NO-induced thymocyte apoptosis[3].

Ac-YVAD-CHO (15.6 μM, 12 h) inhibits NO-induced PARP cleavage in SNAP-treated thymocytes[3].

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

Western Blot Analysis[3]

Cell Line:	SNAP-treated thymocytes
Concentration:	15.6 μM
Incubation Time:	12 h
Result:	Reduced PARP cleavage.

In Vivo

Ac-YVAD-CHO (30 mg/kg; i.p.; 6 hours) suppresses IL-1β levels in blood of P. acnes-sensitized mice[1].
Ac-YVAD-CHO (2-8 μg, intrastriatal infusion) attenuates Quinolinic acid (QA)-induced apoptosis in rat striatum[2].
Ac-YVAD-CHO (10 and 50 mg/kg; i.p.; 1 hour) is cleared from the blood rapidly, and drops precipitously to approximately 1 and 0.2 μM at 30 and 60 minutes after injection[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	P. acnes-sensitized mice[1]
Dosage:	50 mg/kg
Administration:	I.p.;
Result:	Suppressed IL-1β levels in blood.

Animal Model:	Quinolinic acid-treated Rats[2]
Dosage:	2-8 μg
Administration:	Intrastriatal infusion.
Result:	Attenuated Quinolinic acid (QA)-induced increases in p53 and apoptosis in rat striatum. Inhibited QA-induced increases in caspase-1 activity and p53 protein levels, with no effect on QA-induced IκB-α degradation, NF-κB or AP-1 activation.

REFERENCES

[1]. Cao Y, et al. Caspase-1 inhibitor Ac-YVAD-CHO attenuates quinolinic acid-induced increases in p53 and apoptosis in rat striatum. Acta Pharmacol Sin. 2005 Feb;26(2):150-4.

[2]. Zhou X, et al. Nitric oxide induces thymocyte apoptosis via a caspase-1-dependent mechanism. J Immunol. 2000 Aug 1;165(3):1252-8.

[3]. Fletcher DS, et al. A synthetic inhibitor of interleukin-1 beta converting enzyme prevents endotoxin-induced interleukin-1 beta production in vitro and in vivo. J Interferon Cytokine Res. 1995;15(3):243-248.

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