Ac-YVAD-cmk

Cat. No.: HY-16990

CAS No.: 178603-78-6

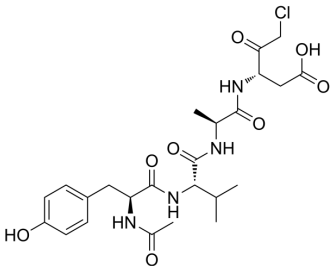
Molecular Formula: $C_{24}H_{33}ClN_4O_8$

Molecular Weight: 540.99

Target: Caspase

Pathway: Apoptosis

Storage: -20°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (184.85 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8485 mL	9.2423 mL	18.4846 mL
	5 mM	0.3697 mL	1.8485 mL	3.6969 mL
	10 mM	0.1848 mL	0.9242 mL	1.8485 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (3.84 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.84 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ac-YVAD-cmk (Caspase-1 Inhibitor II) is a selective caspase-1 (IL-1beta converting enzyme, ICE)) inhibitor with neuroprotective and anti-inflammatory effects. Ac-YVAD-cmk effectively suppresses the expression of IL-1β and IL-18. Ac-YVAD-cmk inhibits pyroptosis in many diseases[1][2].

IC_{50} & Target

Caspase-1

In Vitro

Ac-YVAD-cmk (40 μM or 80 μM) reduces the expression of IL-1β and IL-18 in activated microglia in vitro[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Ac-YVAD-cmk treatment (1 μg/rats; SD rat; injected into the left lateral ventricle) significantly decreases the protein levels of caspase-1 (p20), mature IL-1β/IL-18 compared with the ICH group[2].

	Ac-YVAD-cmk (rats with ac-YVAD-cmk at a dose of 12.5 μmol/kg) significantly reduces mortality from 83 to 33% using Log Rank analysis[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Int Immunopharmacol. 2024 Jan 16:128:111537.
- J Leukoc Biol. 2023 Jul 25;qiad088.
- Molecules. 2023, 28(3), 1312.
- Food Chem Toxicol. 2023 Jun 9;113886.
- Research Square Preprint. 2023 Oct 23.

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REFERENCES

[1]. Wang F, et al. Alcohol accumulation promotes esophagitis via pyroptosis activation. Int J Biol Sci. 2018;14(10):1245-1255. Published 2018 Jul 13.

[2]. Liang H, et al. Ac-YVAD-cmk improves neurological function by inhibiting caspase-1-mediated inflammatory response in the intracerebral hemorrhage of rats. Int Immunopharmacol. 2019;75:105771.

[3]. Mathiak G, et al. Caspase-1-inhibitor ac-YVAD-cmk reduces LPS-lethality in rats without affecting haematology or cytokine responses. Br J Pharmacol. 2000;131(3):383-386.

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