

Ac-YVAD-CMK

Chemical Properties

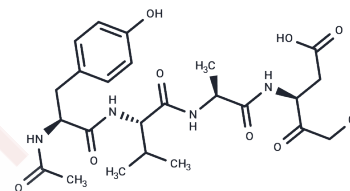
CAS No. : 178603-78-6

Formula: C₂₄H₃₃ClN₄O₈

Molecular Weight: 540.99

Storage: Store at low temperature, Keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	Ac-YVAD-CMK (Ac-Tyr-Val-Ala-Asp-CMK) is a selective and irreversible inhibitor of Caspase-1 and inhibits pyroptosis, IL-1 β and IL-18. Ac-YVAD-CMK shows neuroprotective and anti-inflammatory capacity.
Targets(IC50)	Caspase, Pyroptosis, IL Receptor, Immunology/Inflammation related
In vitro	Ac-YVAD-cmk (40 and 80 μ M) reduces the expression of IL-1 β and IL-18 in activated microglia[3].
In vivo	In SD rats, Ac-YVAD-cmk treatment (1 μ g; injection into the left lateral ventricle) significantly decreases the protein levels of caspase-1 and mature IL-1 β /IL-18 compared with the ICH group[3]. Ac-YVAD-cmk (12.5 μ mol/kg) significantly reduces mortality from 83 to 33% in rats[4].

Solubility Information

Solubility	DMSO: 90 mg/mL (166.36 mM), Sonication is recommended. DMF: 10 mg/mL (18.48 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (6.1 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
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
50 mM	0.037 mL	0.1848 mL	0.3697 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

- Rabuffetti, M., Sciorati, C., Tarozzo, G., et al. Inhibition of caspase-1-like activity by Ac-Tyr-Val-Ala-Asp-chloromethyl ketone induces long-lasting neuroprotection in cerebral ischemia through apoptosis reduction and decrease of proinflammatory cytokines. *Journal of Neuroscience* 20, 4398-4404 (2000).
- Wang F, et al. Alcohol accumulation promotes esophagitis via pyroptosis activation. *Int J Biol Sci.* 2018;14(10): 1245-1255. Published 2018 Jul 13.
- 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.
- 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.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481