Z-FY-CHO

Cat. No.: HY-128140

CAS No.: 167498-29-5

Molecular Formula: $C_{26}H_{26}N_2O_5$

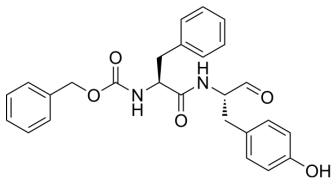
Molecular Weight: 446.5

Target: Cathepsin

Pathway: Metabolic Enzyme/Protease

Storage: -20°C, sealed storage, away from moisture

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (223.96 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2396 mL	11.1982 mL	22.3964 mL
	5 mM	0.4479 mL	2.2396 mL	4.4793 mL
	10 mM	0.2240 mL	1.1198 mL	2.2396 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: ≥ 1.25 mg/mL (2.80 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 1.25 mg/mL (2.80 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (2.80 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Z-FY-CHO (Z-Phe-Tyr-CHO) is a potent and specific cathepsin L (CTSL) inhibitor[1][2].

IC_{50} & Target

cathepsin L

In Vitro

Z-FY-CHO (10 μM, for 1 h) pretreatment alleviated cell death induced by 6-OHDA. Z-FY-CHO inhibits the increase in CTSL protein expression in 6-OHDA-treated SH-SY5Y cells. Treatment with Z-FY-CHO caused more LC3-II and less P62 expression in SH-SY5Y cells treated with 6-OHDA, indicating enhancing autophagy activity, and Z-FY-CHO blocks activation of caspase-3 and PARP[1].

?Treatment with the specific cathepsin L inhibitor Z-FY-CHO (10 μM) or transfection with cathepsin L shRNA significantly

	increased the radiosensitivity of U251 cells. Both suppression and knockdown of cathepsin L in U251 cells increased irradiation-induced DNA damage and G2/M phase cell cycle arrest. Both suppression and knockdown of cathepsin L in U251 cells also increased irradiation-induced apoptosis, as shown by the increased levels of Bax and decreased levels of Bcl-2[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Intraperitoneal administration of Z-FY-CHO (2.5-10 mg/kg) for 4 weeks suppresses bone weight loss dose dependently in the ovariectomized mouse, experimental model of osteoporosis. Z-FY-CHO acts as a bone resorption suppressor through the inhibition of collagen degradation[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Discov. 2022 Sep 20;8(1):94.
- Emerg Microbes Infect. 2023 Apr 26;2207688.

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REFERENCES

[1]. Lingyun Li, et al. Activated cathepsin L is associated with the switch from autophagy to apoptotic death of SH-SY5Y cells exposed to 6-hydroxydopamine. Biochem Biophys Res Commun. 2016 Feb 12;470(3):579-585.

[2]. Qing-qing Zhang, et al. Cathepsin L suppression increases the radiosensitivity of human glioma U251 cells via G2/M cell cycle arrest and DNA damage. Acta Pharmacol Sin. 2015 Sep;36(9):1113-25.

[3]. J T Woo, et al. Suppressive effect of N-(benzyloxycarbonyl)-L-phenylalanyl-L-tyrosinal on bone resorption in vitro and in vivo. Eur J Pharmacol. 1996 Apr 4;300(1-2):131-5.

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