Z-LVG-CHN2

Cat. No.: HY-108137

CAS No.: 119670-30-3

Molecular Formula: $C_{22}H_{31}N_5O_5$

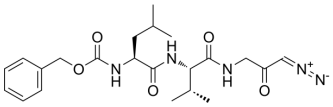
Molecular Weight: 445.51

Target: Cathepsin; HSV; SARS-CoV

Pathway: Metabolic Enzyme/Protease; Anti-infection

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (224.46 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2446 mL	11.2231 mL	22.4462 mL
	5 mM	0.4489 mL	2.2446 mL	4.4892 mL
	10 mM	0.2245 mL	1.1223 mL	2.2446 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: 2.5 mg/mL (5.61 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (5.61 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.61 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Z-LVG-CHN2 is a cell-permeable and irreversible inhibitor of cysteine proteinase. Z-LVG-CHN2 is a tripeptide derivative and mimics part of the human cysteine proteinase-binding center. Z-LVG-CHN2 displays an inhibition on HSV whereas no significant effect on poliovirus replication. Z-LVG-CHN2 effectively blocks SARS-COV-2 replication (EC_{50}=190 nM) via inhibition of SARS-COV-2 3CL pro protease[3].

IC_{50} & Target

EC50: 190 nM (SAR-COV-2)[3]

In Vitro

Z-LVG-CHN2 (0-10 μM; pre-treated for 16 h) inhibits antiviral activities in a discernable dose-dependent manner in Vero E6

cells by designed to capture multicycle replication, exhibiting an EC_{50} value of 0.19 μM[1].

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

Cell Viability Assay[3]

Cell Line:	Vero E6 cells
Concentration:	0.001 μM, 0.003 μM, 0.1 μM, 0.3 μM, 1 μM, 2.5 μM
Incubation Time:	Pre-treated for 16 h and then cultured for 24 hours
Result:	Inhibited SARS-COV-2 virus replication in a dose-dependent manner.

CUSTOMER VALIDATION

- Nucleic Acids Res. 2021 Jan 8;49(D1):D1113-D1121.
- Sci Rep. 2022 Jul 16;12(1):12197.

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REFERENCES

[1]. R L Mellgren, et al. Inhibition of growth of human TE2 and C-33A cells by the cell-permeant calpain inhibitor benzyloxycarbonyl-Leu-Leu-Tyr diazomethyl ketone. Exp Cell Res. 1994 Nov;215(1):164-71.

[2]. L Björck, et al. Cystatin C, a human proteinase inhibitor, blocks replication of herpes simplex virus. J Virol

[3]. Laura Riva, et al.A Large-scale Drug Repositioning Survey for SARS-CoV-2 Antivirals. bioRxiv. 2020 Apr 17;2020.04.16.044016.

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