MG-101

Cat. No.: HY-18964

CAS No.: 110044-82-1

Molecular Formula: $C_{20}H_{37}N_3O_4$

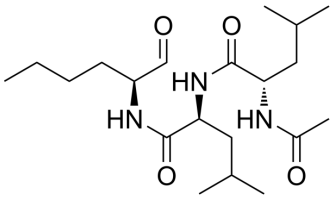
Molecular Weight: 383.53

Target: Proteasome; Apoptosis

Pathway: Metabolic Enzyme/Protease; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (325.92 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.6074 mL	13.0368 mL	26.0736 mL
5 mM	0.5215 mL	2.6074 mL	5.2147 mL
10 mM	0.2607 mL	1.3037 mL	2.6074 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: ≥ 1.67 mg/mL (4.35 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 1.67 mg/mL (4.35 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (4.35 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MG-101 (ALLN) is an inhibitor of cysteine proteases which inhibits calpain I, calpain II, cathepsin B and cathepsin L with K_is of 190, 220, 150 and 500 pM, respectively. MG-101 induces apoptosis and inhibits tumor growth, it can be used for the research of colon cancer[1].

In Vitro

MG-101 (0-26 μM; 24 h) affects the growth of colon cancer HCT116 cells[1].
MG-101 (0-26 μM; 24 h) induces apoptosis of various cancer cells[1].
MG-101 (0-26 μM; 24 h) induces Bax-dependent apoptosis in HCT116 cells[1].

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

Cell Viability Assay[1]

Cell Line:	HCT116 cell line
Concentration:	0-26 μM
Incubation Time:	24 hours
Result:	Anchorage-independently and significantly decreased the viability of HCT116 cells.

Western Blot Analysis[1]

Cell Line:	HCT116, RKO, SW480 and HepG2 cell lines
Concentration:	0-26 μM
Incubation Time:	24 hours
Result:	Dose-dependently decreased the concentration of pro-caspase 3 and increased the concentration of cleaved-PARP in HCT116 cells. Induced apoptosis of HCT116, RKO, SW480 and HepG2 cells.

Western Blot Analysis[1]

Cell Line:	HCT116, HCT116/p53$^{-/-}$ and HCT116/Bax$^{-/-}$ cell lines
Concentration:	0-26 μM
Incubation Time:	24 hours
Result:	Induced apoptosis via a Bax-dependent manner, but not via a p53-dependent manner.

In Vivo

MG-101 (10 mg/kg; i.p. once daily for 15 days) inhibits tumor growth in nude mice[1].

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

Animal Model:	Female athymic nude mice with HCT116 cells injection[1]
Dosage:	10 mg/kg
Administration:	Intraperitoneal injection; 10 mg/kg once daily; for 15 days
Result:	Significantly decreased tumor weight and volume of treated mice at day 26 compared to control mice, and showed no effect on body weights.

CUSTOMER VALIDATION

- Science. 2021 Mar 5;371(6533):eabb2224.
- Cell Rep. 2021 Jun 29;35(13):109299.
- Glia. 2022 Aug 10.
- Int J Mol Sci. 2022 May 16;23(10):5529.
- J Cell Mol Med. 2020 Aug;24(16):9287-9299.

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REFERENCES

[1]. Li SZ, et al. ALLN hinders HCT116 tumor growth through Bax-dependent apoptosis. Biochem Biophys Res Commun. 2013 Jul 26;437(2):325-330.

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