Dasminapant

Cat. No.: HY-125593

CAS No.: 1570231-89-8

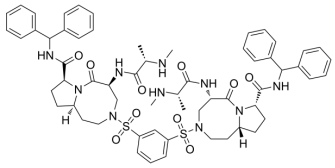
Molecular Formula: $C_{60}H_{72}N_{10}O_{10}S_2$

Molecular Weight: 1157.4

Target: IAP; Apoptosis

Pathway: Apoptosis

Storage: -20°C, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (43.20 mM; Need ultrasonic)
H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.8640 mL	4.3200 mL	8.6401 mL
5 mM	0.1728 mL	0.8640 mL	1.7280 mL
10 mM	0.0864 mL	0.4320 mL	0.8640 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 (2.16 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (2.16 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (2.16 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Dasminapant (APG-1387), a bivalent SMAC mimetic and an IAP antagonist, blocks the activity of IAPs family proteins (XIAP, cIAP-1, cIAP-2, and ML-IAP). Dasminapant induces degradation of cIAP-1 and XIAP proteins, as well as caspase-3 activation and PARP cleavage, which leads to apoptosis. Dasminapant can be used for the research of hepatocellular carcinoma, ovarian cancer, and nasopharyngeal carcinoma[1][2][3][4][5].

IC_{50} & Target

IAP[1]

In Vitro

Dasminapant (0.02-20 μM; 24 h) induces rapid degradation of cIAPs in HepG2 and HCCLM3 cells[1].

Dasminapant (2 μM; 24 h) enhances TNF-α- and TRAIL-mediated anti-cancer activities in HepG2 and HCCLM3 cells. Dasminapant sensitizes HepG2 and HCCLM3 cells to NK cell-mediated killing in vitro[1].

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

Western Blot Analysis[1]

Cell Line:	HepG2 and HCCLM3 cells
Concentration:	0.02, 0.2, 2, 20 μM
Incubation Time:	1, 6, 24 hours
Result:	Decreased the expression of cIAP1 and cIAP2 in both cell lines in a dose- and time-dependent manner. Inhibited the expression of X chromosome-linked IAP (XIAP) at a high dose.

In Vivo

Dasminapant (20 mg/kg; i.p. every 3 days for 4 weeks) sensitizes HCCLM3 tumors toward NK cell-mediated killing in mice[1]. Dasminapant (20 mg/kg; i.p. every 3 days for 4 weeks) monotherapy exhibits some degree of anti-tumor effect and is well tolerated in mice[1].

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

Animal Model:	Non-obese diabetic and severe combined immunodeficiency (NOD-SCID) mice bearing HCCLM3 tumors are injected with NK cells[1]
Dosage:	20 mg/kg
Administration:	I.p. every 3 days for 4 weeks
Result:	Decreased the expression of cIAP1 and cIAP2, and less potent to XIAP expression. Potentiated the effects of pre-activated NK cells on HCCLM3 xenograft tumor growth and tumor weight.

REFERENCES

[1]. Chen Z, et, al. The SMAC Mimetic APG-1387 Sensitizes Immune-Mediated Cell Apoptosis in Hepatocellular Carcinoma. Front Pharmacol. 2018 Nov 6; 9:1298.

[2]. Li BX, et, al. Novel smac mimetic APG-1387 elicits ovarian cancer cell killing through TNF-alpha, Ripoptosome and autophagy mediated cell death pathway. J Exp Clin Cancer Res. 2018 Mar 12;37(1):53.

[3]. Li N, et, al. A novel Smac mimetic APG-1387 demonstrates potent antitumor activity in nasopharyngeal carcinoma cells by inducing apoptosis. Cancer Lett. 2016 Oct 10;381(1):14-22.

[4]. Li Q, et, al. Abstract 6216: Therapeutic potential of IAP inhibitor APG-1387 in combination with PARP- or MEK-targeted therapy, or chemotherapy in pancreatic cancer. American Association for Cancer Research. Aug 2020. 80(16).

[5]. Pan w, et, al. Abstract 1754: Smac mimetics APG-1387 synergizes with immune checkpoint inhibitors in preclinical models. American Association for Cancer Research. Jul 2018. 78(13).

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