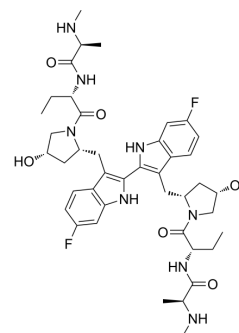


Birinapant

Cat. No.:	HY-16591		
CAS No.:	1260251-31-7		
Molecular Formula:	C ₄₂ H ₅₆ F ₂ N ₈ O ₆		
Molecular Weight:	806.94		
Target:	IAP; Apoptosis; HIV		
Pathway:	Apoptosis; Anti-infection		
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 (154.91 mM; Need ultrasonic)			
		Solvent Concentration	Mass	
			1 mg	5 mg
			10 mg	
Preparing Stock Solutions	1 mM	1.2392 mL	6.1962 mL	12.3925 mL
	5 mM	0.2478 mL	1.2392 mL	2.4785 mL
	10 mM	0.1239 mL	0.6196 mL	1.2392 mL
Please refer to the solubility information to select the appropriate solvent.				
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.08 mg/mL (2.58 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: 2.08 mg/mL (2.58 mM); Suspended solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (2.58 mM); Clear solution 			

BIOLOGICAL ACTIVITY

Description	Birinapant (TL32711), a bivalent Smac mimetic, is a potent antagonist for XIAP and cIAP1 with K _d s of 45 nM and less than 1 nM, respectively. Birinapant (TL32711) induces the autoubiquitylation and proteasomal degradation of cIAP1 and cIAP2 in intact cells, which results in formation of a RIPK1: caspase-8 complex, caspase-8 activation, and induction of tumor cell death. Birinapant (TL32711) targets TRAF2-associated cIAPs and abrogates TNF-induced NF-κB activation.
IC₅₀ & Target	K _d : 45 nM (XIAP), <1 nM (cIAP1) ^[1]

In Vitro

Birinapant (TL32711) (30-10000 nM; 24 hours) significantly decreases the viability of SUM190 cells in a dose-dependent manner^[1].
?Birinapant (TL32711) (30-1000 nM; 4 hours) shows a significant decrease in cIAP1 levels and enhanced PARP cleavage, and induces apoptosis^[1].
?Birinapant (TL32711) binds with high affinity to the isolated BIR3 domains of cIAP1, cIAP2, and XIAP and the single BIR domain of ML-IAP and rapidly degrades TRAF2-bound cIAP1 and cIAP2 thereby inhibiting TNF-mediated NF- κ B activation^[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay^[1]

Cell Line:	TRAIL-resistant SUM190 IBC cells
Concentration:	30, 100, 300, 1000, 10000 nM
Incubation Time:	24 hours
Result:	Significantly decreased the viability of SUM190 cells in a dose-dependent manner.

Western Blot Analysis^[1]

Cell Line:	SUM190 cells
Concentration:	30, 300, 1000 nM
Incubation Time:	4 hours
Result:	Showed a significant decrease in cIAP1 levels and enhanced PARP cleavage.

In Vivo

Birinapant (TL32711) (30 mg/kg; i.p.; every third day (*5)) shows antitumor efficacy and are devoid of overt toxicity in preclinical models^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female athymic nude mice (low-passage, patient-derived xenotransplant models of ovarian cancer, colorectal cancer, and melanoma) ^[2]
Dosage:	30 mg/kg
Administration:	Intraperitoneal injection; every third day (*5)
Result:	Resulted in inhibition of tumor growth.

CUSTOMER VALIDATION

- Cell. 2019 Jul 25;178(3):585-599.e15.
- Cell Death Differ. 2021 Oct;28(10):2888-2899.
- Dev Cell. 2019 Oct 21;51(2):277-291.e4.
- Cell Death Dis. 2021 Jun 23;12(7):641.
- Cell Death Dis. 2020 Feb 5;11(2):94.

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REFERENCES

[1]. Allensworth JL, et al. Smac mimetic Birinapant induces apoptosis and enhances TRAIL potency in inflammatory breast cancer cells in an IAP-dependent and TNF- α -independent mechanism. *Breast Cancer Res Treat.* 2013 Jan;137(2):359-71.

[2]. Krepler C, et al. The novel SMAC mimetic birinapant exhibits potent activity against human melanoma cells. *Clin Cancer Res.* 2013 Apr 1;19(7):1784-94.

[3]. Nguyen QD, et al. Temporal and spatial evolution of therapy-induced tumor apoptosis detected by caspase-3-selective molecular imaging. *Clin Cancer Res.* 2013 Jul 15;19(14):3914-24.

[4]. Benetatos CA, et al. Birinapant (TL32711), a bivalent SMAC mimetic, targets TRAF2-associated cIAPs, abrogates TNF-induced NF- κ B activation, and is active in patient-derived xenograft models. *Mol Cancer Ther.* 2014 Apr;13(4):867-79.

Caution: Product has not been fully validated for medical applications. For research use only.

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