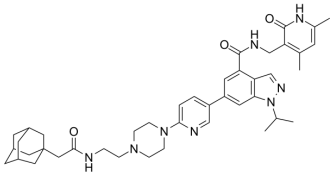
MS1943

Cat. No.:	HY-133129
CAS No.:	2225938-17-8
Molecular Formula:	$C_{42}H_{54}N_8O_3$
Molecular Weight:	718.93
Target:	Histone Methyltransferase; Apoptosis
Pathway:	Epigenetics; Apoptosis
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (173.87 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.3910 mL	6.9548 mL	13.9096 mL
	5 mM	0.2782 mL	1.3910 mL	2.7819 mL
	10 mM	0.1391 mL	0.6955 mL	1.3910 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: ≥ 6.25 mg/mL (8.69 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 6.25 mg/mL (8.69 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 6.25 mg/mL (8.69 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MS1943 is a first-in-class, orally bioavailable EZH2 selective degrader, with an IC_{50} of 120 nM. MS1943 significantly reduces EZH2 protein levels in numerous triple-negative breast cancer (TNBC) and other cancer and noncancerous cell lines. MS1943 effectively blocks proliferation of multiple TNBC and other cancer cell lines[1].

IC_{50} & Target

EZH2
120 nM (IC_{50})

In Vitro

MS1943 (0.625-5 μM; 3 days) inhibits cell growth with an GI_{50} of 2.2 μM[1].
MS1943 (0.625-5 μM; 4 days) induces cell death in MDA-MB-468 cells. MS1943 effectively reduces EZH2 levels in BT549, HCC70 and MDA-MB-231 TNBC cells, as well as KARPAS-422 and SUDHL8 lymphoma cells and PNT2 non-cancerous prostate cells[1].
MS1943 (1.25-5.0 μM; 2 days) inhibits EZH2 and SUZ12 protein levels in a concentration- and timedependent manner, without affecting EED protein levels, whereas the H3K27me3 mark was also suppressed[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	MDA-MB-468 cells
Concentration:	0.625, 1.25, 2.5, 5 μM
Incubation Time:	3 days
Result:	Inhibits cell growth with an GI_{50} of 2.2 μM.

Western Blot Analysis[1]

Cell Line:	MDA-MB-468 cells
Concentration:	1.25, 2.5, 5.0 μM
Incubation Time:	2 days
Result:	Reduced EZH2 protein levels in a concentration- and time-dependent manner.

In Vivo

MS1943 (150 mg/kg body weight; i.p.; once daily for 36 days) suppresses tumor growth[1].
MS1943 induces apoptosis in the MDA-MB-468 xenograft model[1].
A single i.p. injection of MS1943 at 50 mg/kg body weight achieved a peak plasma concentration (Cmax) of 2.9 μM and resulted in plasma concentrations above its cellular IC_{50} value for ~2h. A single 150 mg/kg body weight p.o. dose achieved Cmax of 1.1 μM, but plasma concentrations were below the cellular IC_{50} value[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Eight-week-old female BALB/c nude mice (MDA-MB-468 xenografts)[1]
Dosage:	150 mg/kg body weight
Administration:	i.p.; once daily for 36 days
Result:	Suppresses tumor growth.

CUSTOMER VALIDATION

- Research Square Preprint. 2021 Dec.

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REFERENCES

[1]. Ma A, et al. Discovery of a first-in-class EZH2 selective degrader.Nat Chem Biol. 2020 Feb;16(2):214-222.

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

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