TH-6

Cat. No.: HY-149029

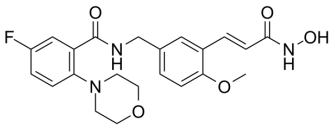
Molecular Formula: $C_{22}H_{24}FN_3O_5$

Molecular Weight: 429.44

Target: HDAC; Apoptosis; Reactive Oxygen Species

Pathway: Cell Cycle/DNA Damage; Epigenetics; Apoptosis; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (116.43 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3286 mL	11.6431 mL	23.2861 mL
	5 mM	0.4657 mL	2.3286 mL	4.6572 mL
	10 mM	0.2329 mL	1.1643 mL	2.3286 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

TH-6 is a potent HDAC inhibitor with IC_{50}s of 0.115, 0.135, 0.242, 0.138, 2.120 μM for HDAC1, HDAC2, HDAC3, HDAC6, HDAC8, respectively. TH-6 inhibits cell migration and invasion. TH-6 induces apoptosis and cell cycle arrest at G2/M phase. TH-6 shows anti-tumor activity[1].

IC_{50} & Target

HDAC1 0.115 μM (IC_{50})	HDAC2 0.135 μM (IC_{50})	HDAC3 0.242 μM (IC_{50})	HDAC6 0.138 μM (IC_{50})
HDAC8 2.120 μM (IC_{50})			

In Vitro

TH-6 (0-2 μM) shows antiproliferative activities in cancer cell lines and normal human lung cells[1].
TH-6 (0-10 μM) inhibits tubulin polymerization with an IC_{50} value of 4.06 μM[1].
TH-6 (0.03, 0.1, 0.3 1 μM; 24 h) increases the expression of Ac-α-Tubulin and AC-Histone H3 in HepG2 cells[1].
TH-6 (7.5, 15, 30 nM) induces apoptosis and cell cycle arrest at G2/M phase[1].
TH-6 (0-30 nM) decreases the MMP and increase ROS levels of HepG2 cells in a dose-dependent manner[1].
TH-6 (7.5, 15, 30 nM; 48 h) inhibits cell migration and invasion in MDA-MB-231 cells and suppress the migration of HUVECs in a concentration-dependent manner[1].

TH-6 shows favorable liver microsomal stability in vitro with $t_{1/2}$ of 50.3 min[1].

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

Cell Viability Assay[1]

Cell Line:	K562, GepG2, HCT-116, MDA-MB-231, H22, MCF-7, HFL-1 cells
Concentration:	0-2 μM
Incubation Time:	
Result:	Showed antiproliferative activities with an IC_{50} values of 18, 29, 28, 30, 26, 27, 134 nM for K562, GepG2, HCT-116, MDA-MB-231, H22, MCF-7, HFL-1 cells, respectively.

Western Blot Analysis[1]

Cell Line:	HepG2 cells
Concentration:	0.03, 0.1, 0.3 1 μM
Incubation Time:	24 h
Result:	Increased the intracellular levels of HDAC6 substrate acetyl-α-tubulin and the HDAC1/2/3 substrate acetyl-histone H3 in a dose-dependent manner.

Cell Cycle Analysis[1]

Cell Line:	HepG2 cells
Concentration:	7.5, 15, 30 nM
Incubation Time:	
Result:	Induced cell cycle arrest at G2/M phase with decreased the expression of Cdc2, Cdc25c, and Cyclin B1 proteins in a dose dependent manner.

Apoptosis Analysis[1]

Cell Line:	HepG2 cells
Concentration:	7.5, 15, 30 nM
Incubation Time:	
Result:	Showed an accumulation of apoptotic cells from 27.04 to 50.54% and upregulated the expression of the pro-apoptotic protein (Bax and Bad) and downregulated the expression of the antiapoptotic protein (Bcl-2 and Bcl-xL) in a dose-dependent manner.

In Vivo

TH-6 (10, 20 mg/kg; i.v.; daily for 21 days) shows anti-tumor activity in mouse[1].

TH-6 (20 mg/kg) shows antivascular activity and a good cardiovascular safety profile in mouse[1].

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

Animal Model:	4-5 weeks, 18-22 g female ICR mice (H22 allograft mouse model)[1]
Dosage:	10, 20 mg/kg
Administration:	I.v.; daily for 21 days
Result:	Reduced tumor weights at day 21 by 82% and did not affect body weight during

	treatment, indicating the low toxicity.

REFERENCES

[1]. Zhu H, et al. Discovery of a Novel Vascular Disrupting Agent Inhibiting Tubulin Polymerization and HDACs with Potent Antitumor Effects. J Med Chem. 2022 Aug 4.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA