Scriptaid

Cat. No.: HY-15489

CAS No.: 287383-59-9

Molecular Formula: $C_{18}H_{18}N_2O_4$

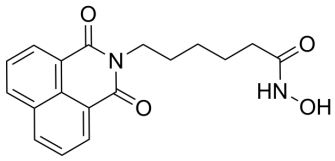
Molecular Weight: 326.35

Target: HDAC; Autophagy; Apoptosis; Influenza Virus

Pathway: Cell Cycle/DNA Damage; Epigenetics; Autophagy; Apoptosis; Anti-infection

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 : 100 mg/mL (306.42 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.0642 mL	15.3210 mL	30.6419 mL
	5 mM	0.6128 mL	3.0642 mL	6.1284 mL
	10 mM	0.3064 mL	1.5321 mL	3.0642 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 (7.66 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.66 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.66 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Scriptaid is a potent histone deacetylase (HDAC) inhibitor, used in cancer research. Scriptaid is also a sensitizer to antivirals and has potential for epstein-barr virus (EBV)-associated lymphomas treatment.

IC_{50} & Target

HDAC

In Vitro

Scriptaid (1 μg/mL) treatment inhibits cell growth in breast cancer cell lines, results in increased accumulation of both acetyl H3 and acetyl H4 proteins in MDA-MB-231, MDA-MB-435, and Hs578t cells. Scriptaid also inhibits cell growth of MDA-MB-231,

	MDA-MB-435, and Hs578t cell lines, with IC_{50}s of 0.5-1.0 μg/mL. Scriptaid (0.1-1.0 μg/mL) induces ER and PR mRNA expression in a dose dependent manner; when it is combined with AZA, they enhance ER expression and induce a functional ER protein[1]. Scriptaid and SAHA preferentially inhibit the Class I histone deacetylases, hdac1, 2, and 3. Scriptaid is a potent anti-T. gondii compound with low cytotoxicity, and the IC_{50} is 39 nM. Scriptaid has atypical effects in T. gondiiinfected HS68 cells[2]. Scriptaid inhibits the growth of HeLa cells with IC_{50} of 2 μM at 48 h in a dose-dependent manner. Scriptaid also affects cell-cycle and apoptosis[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Scriptaid (3.5 μg/g mouse, i.p.) clearly inhibits tumor growth in a xenograft mouse model[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	IC_{50} concentrations of Scriptaid are determined in MDA-MB-231, MDA-MB-435 and Hs578t cells by MTT assay. For cell growth assays, MDA-MB-231, MDA-MB-435, and Hs578t cells are plated at a cell density of 5000 cells/well in 12 well plates and treated with 1.0 μg/mL Scriptaid for up to 3 days. Cells are counted daily using a Coulter counter. Percent growth inhibition is determined by comparison of treated and untreated cells[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Four to six week old athymic female nude mice are housed under laminar flow hoods in an environmentally controlled pathogen free animal facility for the duration of experiments. Mice are injected with 2×10^6 MDA-MB-231 human breast cancer cells into each flank. Tumors are allowed to grow to approximately 0.1 cm^3 in diameter before treatment. Mice are then treated with Scriptaid (3.5 μg/g mouse), TSA (0.5 μg/g mouse), or DMSO vehicle intraperitoneally for five consecutive days with 2 days rest each week for a total of 4 weeks. Individual tumor measurements are recorded from each flank weekly [1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Proc Natl Acad Sci U S A. 2019 Feb 19;116(8):2961-2966.
- Cancer Cell Int. 2021 Jun 5;21(1):291.
- J Cell Mol Med. 2020 Jul;24(14):7789-7801.

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REFERENCES

[1]. Keen JC, et al. A novel histone deacetylase inhibitor, scriptaid, enhances expression of functional estrogen receptor alpha (ER) in ER negative human breast cancer cells in combination with 5-aza 2'-deoxycytidine. Breast Cancer Res Treat. 2003 Oct;81(3):177-86.

[2]. Strobl JS, et al. Scriptaid and suberoylanilide hydroxamic acid are histone deacetylase inhibitors with potent anti-Toxoplasma gondii activity in vitro. J Parasitol. 2007 Jun;93(3):694-700.

[3]. Janaki Ramaiah M, et al. Scriptaid cause histone deacetylase inhibition and cell cycle arrest in HeLa cancer cells: A study on structural and functional aspects. Gene. 2017 Sep 5;627:379-386.

[4]. Ghosh SK, et al. Histone deacetylase inhibitors are potent inducers of gene expression in latent EBV and sensitize lymphoma cells to nucleoside antiviral agents. Blood. 2012 Jan 26;119(4):1008-17.

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

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