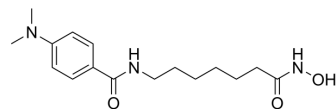


M344

Cat. No.:	HY-13506		
CAS No.:	251456-60-7		
Molecular Formula:	C ₁₆ H ₂₅ N ₃ O ₃		
Molecular Weight:	307.39		
Target:	HDAC		
Pathway:	Cell Cycle/DNA Damage; Epigenetics		
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 (325.32 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	1 mg	5 mg	10 mg
	1 mM	3.2532 mL	16.2660 mL	32.5320 mL
5 mM	0.6506 mL	3.2532 mL	6.5064 mL	
10 mM	0.3253 mL	1.6266 mL	3.2532 mL	

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (8.13 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (8.13 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (8.13 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

M344 (D 237) is an inhibitor of histone deacetylase (IC₅₀=100 nM) and an inducer of terminal cell differentiation.

IC₅₀ & Target

HDAC
 100 nM (IC₅₀)

In Vitro

M344 is a potential histone deacetylase (HDAC) inhibitor. With increasing concentrations of M344, there is a dose dependant

decrease in BRCA1 mRNA and treatment with both 1 and 5 μM concentrations of M344 resulting in a significant decrease in BRCA1 expression in all cell lines examined. M344 in combination with Cisplatin leads to a decrease in BRCA1 mRNA expression as compared to Cisplatin treatment alone in all cell lines with the exception of A2780s, which is recognized as having potent cytotoxicity to Cisplatin. In the MCF7 cell line, BRCA1 is down regulated at physiological doses of M344 (0.5 μM and 1 μM) but M344 does not have the same inhibitory effect on BRCA1 at the 5.0 μM dose. Co-treatment with Cisplatin and increasing concentrations of M344 reduces BRCA1 protein levels in all breast and ovarian cell lines examined^[2].

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

PROTOCOL

Cell Assay ^[2]

The A2780s and A2780cp cell lines, the T-47D and OVCAR-4 cell lines, and the MCF7 and HCC1937 cell lines, are maintained in Dulbecco's-MEM supplemented with 10% fetal bovine serum and 100 $\mu\text{g}/\text{mL}$ penicillin-streptomycin. Unless otherwise described, cells are treated for 24 hrs with 2 $\mu\text{g}/\text{mL}$ Cisplatin alone, and in combination with the HDAC inhibitor M344 at concentrations of 0.5, 1.0, or 5.0 μM . Phase contrast images are collected using the 10 \times objective of an Eclipse TE2000-U. Cell viability is measured by the MTT rapid colorimetric assay. Approximately 4,500 cells are seeded into each well of a 96-well flat bottom plate. The cells are incubated overnight to allow for cell attachment. Cells are then treated with Cisplatin in concentrations of 0-8 $\mu\text{g}/\text{mL}$ alone or in combination with 1 μM of the HDAC inhibitor, M344. Forty eight hours following treatment, 42 μL of a 5 mg/mL MTT substrate solution in phosphate buffered saline (PBS) is added and incubated for up to 4 hrs at 37°C. The resulting violet formazan precipitate is solubilized by the addition of 82 μL of a 0.01 M HCl/10% SDS solution and plates are incubated overnight at 37°C. The plates are then analyzed on an MRX Microplate Reader at 570 nm to determine the optical density of the samples^[2].

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

CUSTOMER VALIDATION

- J Mol Med (Berl). 2019 Aug;97(8):1183-1193.
- Technol Cancer Res Treat. Jan-Dec 2022;21:15330338221085361.

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REFERENCES

[1]. Jung M1, et al. Amide analogues of trichostatin A as inhibitors of histone deacetylase and inducers of terminal cell differentiation. J Med Chem. 1999 Nov 4;42(22):4669-79.

[2]. Weberpals JI, et al. The effect of the histone deacetylase inhibitor M344 on BRCA1 expression in breast and ovarian cancer cells. Cancer Cell Int. 2011 Aug 19;11(1):29.

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

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