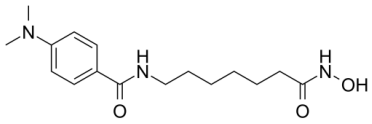
Data Sheet

Product Name:	M344
Cat. No.:	CS-1342
CAS No.:	251456-60-7
Molecular Formula:	C16H25N3O3
Molecular Weight:	307.39
Target:	HDAC
Pathway:	Cell Cycle/DNA Damage; Epigenetics
Solubility:	DMSO : ≥ 100 mg/mL (325.32 mM)



BIOLOGICAL ACTIVITY:

M344 (D 237) is an inhibitor of **histone deacetylase** (IC_{50}=100 nM) and an inducer of terminal cell fifferentiation. IC50 & Target: IC50: 100 nM (Histone Deacetylase)[1] **In Vitro:** M344 is a potential histone deacetylase (HDAC) inhibitor. BRCA1 mRNA levels are determined by RT-PCR following exposure to increasing concentrations of the HDAC inhibitor M344 alone and in combination with Cisplatin in all 6 cell lines evaluated in this study. 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].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: M344 is dissolved in DMSO and then diluted with appropriate medium[2].[2]The A2780s and A2780cp cell lines, the T-47D and OVCAR-4 cell lines. and the MCF7 and HCC1937cell lines, are maintained in Dulbecco's-MEM supplemented with 10% fetal bovine serum and 100 μg/mL penicillin-streptomycin. Unless otherwise described, cells are treated for 24 hrs with 2 μg/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× 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 μg/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].

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.

CAIndexNames:

Benzamide, 4-(dimethylamino)-N-[7-(hydroxyamino)-7-oxoheptyl]-

SMILES:

O=C(NCCCCCCC(NO)=O)C1=CC=C(N(C)C)C=C1

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