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产品名称：4-二甲基氨基-N-(6-羟基氨基甲酰己基)苯甲酰胺
产品别名：M344；D 237; MS 344

生物活性：

Description	M344 (D 237) is an inhibitor of histone deacetylase (IC50=100 nM) and an inducer of terminal cell fifferentiation.
IC_{50} & Target	HDAC
	100 nM (IC_{50})
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].

Solvent&Solubility

In Vitro:

DMSO : ≥ 100 mg/mL (325.32 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / 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

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

In Vivo:

请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 In Vitro 方式配制澄清的储备液，再依次添加助溶剂：

——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶

1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline

Solubility: ≥ 2.5 mg/mL (8.13 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (8.13 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀；

	向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。 2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (8.13 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (8.13 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。 3.请依序添加每种溶剂： 10% DMSO →90% corn oil Solubility: ≥ 2.5 mg/mL (8.13 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (8.13 mM，饱和度未知) 的澄清溶液，此方案不适用于实验周期在半个月以上的实验。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
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.

实验参考：

Cell Assay	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.