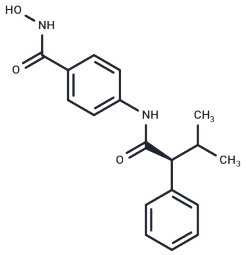
Data Sheet (Cat.No.T6392)

TargetMol®
YOUR TARGET MOLECULES

AR42

Chemical Properties



CAS No. : 935881-37-1

Formula: C18H20N2O3

Molecular Weight: 312.36

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	AR42 (OSU-HDAC42) is an HDAC inhibitor (IC50: 30 nM).
Targets(IC50)	HDAC
In vitro	AR-42 induces p21WAF/CIP1 overexpression and histone hyperacetylation and inhibits the growth of DU-145 cells (IC50 of 0.11 μM) [1]. AR-42 is effective in suppressing the proliferation of PC-3 and U87 mg cells, in part, because of its ability to down-regulate Akt signaling [2]. AR-42 inhibits the growth of PC-3 (IC50: 0.48 μM) and LNCaP (IC50: 0.3 μM) cells. Compared to SAHA, AR-42 has markedly superior apoptogenic potency and causes obviously greater decreases in Bcl-xL, phospho-Akt, and survivin in PC-3 cells [3]. in malignant mast cell lines, AR-42 induces growth inhibition, cell- cycle arrest, apoptosis, and activation of caspases-3/7. AR-42 down-regulates the expression of p-Akt, total Akt, phosphorylated STAT3/5 (pSTAT3/5), and total STAT3/5 [6]. AR-42 effectively inhibits the growth of Raji, JeKo-1, and 697 cells (IC50<0.61 μM). AR-42 also sensitizes CLL cells to TNF-Related Apoptosis-Inducing Ligand (TRAIL), potentially through reduction of c-FLIP [7]. AR-42 also induces autophagy through downregulation of Akt/mTOR signaling and inducing ER stress in HCC cells.
In vivo	The growth of PC-3 tumor xenografts is suppressed by 52% and 67% after treatment with AR-42 (25/50 mg/kg), respectively, whereas SAHA (50 mg/kg) suppresses growth by 31%. In contrast to mice treated with SAHA, intratumoral levels of Bcl-xL and pAkt are markedly reduced in AR-42 treated mice. [3] In the transgenic adenocarcinoma of the mouse prostate (TRAMP) model, AR-42 not only decreases the severity of prostatic intraepithelial neoplasia (PIN) and completely prevents its progression to poorly differentiated carcinoma, but also shifts tumorigenesis to a more differentiated phenotype, suppressing absolute (86%) and relative (85%) urogenital tract weights. [5] AR-42 markedly reduces leukocyte counts and prolongs survival in three separate mouse models of B-cell malignancy without toxicity.
Kinase Assay	In vitro HDAC assay:HDAC activity is analyzed by using an HDAC assay kit. This assay is based on the ability of DU-145 nuclear extract, which is rich in HDAC activity, to mediate the deacetylation of the biotinylated [3H]-acetyl histone H4 peptide that is bound to streptavidin agarose beads. The release of [3H]-acetate into the supernatant is measured to calculate the HDAC activity. Sodium butyrate (0.25-1 mM) is used as a positive control.

Cell Research	Concentrations: Dissolved in DMSO,final concentrations ~2.5 μM. Method: DU-145 Cells are exposed to various concentrations of AR-42 for 96 hours.The medium is removed and replaced by 150 μL of 0.5 mg/mL of MTT in RPMI 1640 medium,and the cells are incubated in the CO2 incubator at 37 °C for 2 hours.Supernatants are removed from the wells,and the reduced MTT dye is solubilized with 200 μL/well of DMSO.Absorbance is determined on a plate reader at 570 nm.
Animal Research	Animal Models: Intact male NCr athymic nude mice inoculated s.c.with PC-3 cells. Formulation: Formulated in methylcellulose/Tween 80. Dosages: ~50 mg/kg/day. Administration: p.o.

Solubility Information

Solubility	Ethanol: 59 mg/mL (188.9 mM), H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 59 mg/mL (188.9 mM), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.2014 mL	16.0072 mL	32.0143 mL
5 mM	0.6403 mL	3.2014 mL	6.4029 mL
10 mM	0.3201 mL	1.6007 mL	3.2014 mL
50 mM	0.064 mL	0.3201 mL	0.6403 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Lu Q, et al. J Med Chem, 2005, 48(17), 5530-5535.
Zhu Y, Yuan T, Zhang Y, et al. AR-42: A Pan-HDAC Inhibitor with Antitumor and Antiangiogenic Activities in