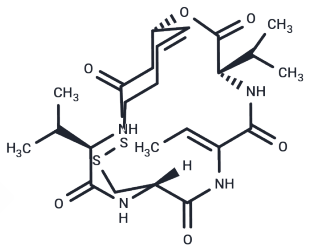
Data Sheet (Cat.No.T6006)

TargetMol

Romidepsin

Chemical Properties



CAS No. : 128517-07-7

Formula: C24H36N4O6S2

Molecular Weight: 540.7

Storage: Store at low temperature
Powder: -20°C for 3 years
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Romidepsin (FR 901228) is an HDAC inhibitor that inhibits HDAC1/2/4/6 (IC50=36/47/510/1400 nM). Romidepsin has antitumor activity and can be used for the treatment of peripheral T-cell lymphoma and cutaneous T-cell lymphoma.
Targets(IC50)	Apoptosis,HDAC
In vitro	**METHODS**: Two malignant T cell lines, PEER and SUPT1, were treated with Romidepsin (2.5-40 nM) for 48 h. Cell viability was measured by MTT Assay. **RESULTS**: Romidepsin inhibited the cell viability of PEER and SUPT1 with IC50 values of 10.8 nM and 7.9 nM. [1] **METHODS**: CD20+ rituximab-sensitive cells, Raji cells and drug-resistant cells, Raji-2R and Raji-4RH, were treated with Romidepsin (10 ng/mL) for 2 days, and intracellular caspase 3 activation level was detected by Flow Cytometry. **RESULTS**: Romidepsin increased active caspase 3 in Raji cells. cleaved active caspase 3 was not detected in Raji-2R and Raji-4RH. [2]
In vivo	**METHODS**: To assay anti-tumor activity in vivo, Romidepsin (4.4 mg/kg) was intraperitoneally injected once a week for three weeks into NSG mice harboring human Burkitt's lymphomas Raji and Raji-2R. **RESULTS**: Romidepsin significantly inhibited the growth of Raji and Raji-2R cells in xenograft mice. [2] **METHODS**: To detect anti-tumor activity in vivo, Romidepsin (0.03 mg/mouse, 0.5% methylcellulose) was intraperitoneally injected into DEN-induced hepatocellular carcinoma in C56BL/6 mice twice a week for three weeks. **RESULTS**: Romidepsin inhibited tumor progression, an effect that was associated with decreased tumor cell proliferation and increased apoptosis. [3]
Kinase Assay	HDAC-inhibitory activity: For the enzyme assay, 10 μL of [3H]acetyl-labeled histones (25,000 cpm/10 μg) are added to 90 μL of the HDAC enzyme fraction extracted from 293T cells overexpressing HDAC1 or HDAC2 in the presence of increasing concentrations of Romidepsin, and the mixture is incubated at 37 °C for 15 minutes. The enzyme reaction is linear for at least 1 hour. The reaction is stopped by the addition of 10 μL of concentrated HCl. The released [3H]acetic acid is extracted with 1 mL of ethylacetate, and 0.9 mL of the solvent layer is taken into 5 mL of aqueous counting scintillant II solution for determination of radioactivity. The IC50 values are determined from at least three independent dose-response curves.

Cell Research	Cells are exposed to various concentrations of Romidepsin for 72 hours in 96-well plates. 20 μL of 5 mg/mL MTT solution in PBS is added to each well for 4 hours. After removal of the medium, 170 μL of DMSO is added to each well to dissolve the formazan crystals. The absorbance at 540 nm is determined. In addition, cells are incubated with trypan blue, and the numbers of blue (dead) cells and transparent (live) cells are counted in a hemocytometer. For cell cycle analysis, cells are incubated for 30 minutes in propidium iodide staining solution containing 0.05 mg/mL propidium iodide, 1 mM EDTA, 0.1% Triton X-100, and 1 mg/mL RNase A in PBS. The suspension is then passed through a nylon mesh filter and analyzed on a Becton Dickinson FACScan. (Only for Reference)

Solubility Information

Solubility	H2O: Insoluble DMSO: 100 mg/mL (184.95 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4 mg/mL (7.4 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.8495 mL	9.2473 mL	18.4945 mL
5 mM	0.3699 mL	1.8495 mL	3.6989 mL
10 mM	0.1849 mL	0.9247 mL	1.8495 mL
50 mM	0.037 mL	0.1849 mL	0.3699 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Valdez BC, et al. Romidepsin targets multiple survival signaling pathways in malignant T cells. Blood Cancer J. 2015 Oct 16;5(10):e357.
Zhao Y, Guo Y, Sun M, et al. Selenium-sensitive histone deacetylase 2 is required for forkhead box O3A and regulates extracellular matrix metabolism in cartilage. Journal of Bone and Mineral Metabolism. 2022: 1-13.
Sun L, Wan A H, Yan S, et al.A multidimensional platform of patient-derived tumors identifies drug susceptibilities for clinical lenvatinib resistance.Acta Pharmaceutica Sinica B.2023
Chu Y, et al. Romidepsin alone or in combination with anti-CD20 chimeric antigen receptor expanded natural killer cells targeting Burkitt lymphoma in vitro and in immunodeficient mice. Oncoimmunology. 2017 Jun 20;6(9): e1341031.
Afaloniati H, et al. HDAC1/2 Inhibitor Romidepsin Suppresses DEN-Induced Hepatocellular Carcinogenesis in Mice. Onco Targets Ther. 2020 Jun 15;13:5575-5588.
Kwon HJ, et al. Int J Cancer, 2002, 97(3), 290-296.
Sasakawa Y, et al. Biochem Pharmacol, 2002, 64(7), 1079-1090.
Sun WJ, et al. Romidepsin induces G2/M phase arrest via Erk/cdc25C/cdc2/cyclinB pathway and apoptosis induction through JNK/c-Jun/caspase3 pathway in hepatocellular carcinoma cells. Biochem Pharmacol. 2017 Mar 1;127:90-100.