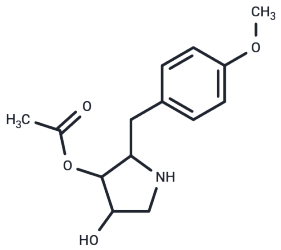
Data Sheet (Cat.No.T6758)

TargetMol

Anisomycin

Chemical Properties



CAS No. : 22862-76-6

Formula: C14H19NO4

Molecular Weight: 265.3

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Anisomycin is an antibiotic and protein synthesis inhibitor produced by Streptomyces griseolus. It is also a classic activator of p38 MAPK and JNK. By inhibiting protein synthesis, anisomycin induces cellular stress, which activates upstream kinases and subsequently leads to the phosphorylation and activation of p38 MAPK and JNK.
Targets(IC50)	Apoptosis,Antibacterial,Antibiotic,Parasite,DNA/RNA Synthesis,JNK
In vitro	Anisomycin (3 μM) decreases protein synthesis in MDA16 and MDA-MB-468 cells, and reduces colony formation by MDA-MB-468 cells. Anisomycin causes an increase in the number of apoptotic cells in MDA-MB-468 cultures, but not in MDA16 cultures. Anisomycin actives JNK phosphorylation in MDA-MB-468 cells.[2] In U251 and U87 cells, anisomycin?(0.01-8 μM) inhibits the cell growth in time- and concentration-dependent manners with the IC50 (48 h) values of 0.233 and 0.192 μmol/L, respectively. Anisomycin?(4 μM) causes 21.5% and 25.3% of apoptosis proportion in U251 and U87 cells, respectively, and activates p38 MAPK and?JNK, while inactivated ERK1/2. Anisomycin?(4 μM) reduces the level of PP2A/C subunit in a time-dependent manner in U251 and U87 cells.[3] Anisomycin inhibits EAC cell proliferation in concentration-dependent manner.[4]
In vivo	Peritumoral administration of anisomycin (5 mg/kg) significantly suppresses Ehrlich ascites carcinoma (EAC) growth resulting in the survival of approximately 60% of the mice 90 days after EAC inoculation.[4]
Kinase Assay	JNK phosphorylation: 500,000 cells/well are seeded in 6-well plates and incubated overnight. Cells are then incubated for 1 h with test compounds or DMSO as vehicle control (?nal concentration 1% v/v). Puromycin is added (?nal concentration of 18 μM) and cells incubated for a further 10 min to label nascent polypeptide chains. Background labelling is determined by incubating cells without puromycin. Cells are then washed in HBSS, harvested by scraping and centrifuged (300 g, 5 min). Cells are resuspended in 0.5 mL 50 mM DTT containing phosphatase inhibitors and incubated at 95°C for 10 min. Samples are then snap frozen in liquid nitrogen and stored at -20°C until blotted. Samples (20–30 μg protein/sample) are blotted onto a PVDF membrane. The membrane is blocked and incubated with anti-phospho-Thr183/Tyr185-JNK antibody overnight at 4°C. Secondary antibodies are used to label the primary antibody and detected using an infrared scanner. The intensity of the ?uorescence signal for anti-phospho-JNK antibody is background corrected and normalized for loading.

Cell Research	For the assay, EAC cells are plated in 96-well plates at a density of 10,000 cells/well/200 μL of medium. The cells are treated with the different concentrations of anisomycin for 48 h. Adriamycin (500 ng/mL) is used as a positive control. 0.5 mg/mL of MTT is added to each well. 4 h later, the formazan product of MTT reduction is dissolved in DMSO, and absorbance is measured at 570 nm using a Model 680 microplate reader.(Only for Reference)

Solubility Information

Solubility	Ethanol: 13.3 mg/mL (50.13 mM),Sonication is recommended. DMSO: 118.75 mg/mL (447.61 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 2.66 mg/mL (10.03 mM),Solution. PBS: 2.5 mg/mL (9.42 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	3.7693 mL	18.8466 mL	37.6932 mL
5 mM	0.7539 mL	3.7693 mL	7.5386 mL
10 mM	0.3769 mL	1.8847 mL	3.7693 mL
50 mM	0.0754 mL	0.3769 mL	0.7539 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

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