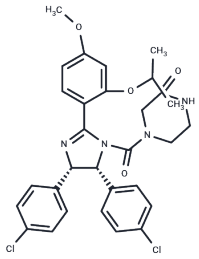
Data Sheet (Cat.No.T6023)

TargetMol

Nutlin-3a

Chemical Properties



CAS No. : 675576-98-4

Formula: C30H30Cl2N4O4

Molecular Weight: 581.49

Appearance: no data available

Storage: store at low temperature,keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Nutlin-3a is the active enantiomer of Nutlin-3, an MDM2 antagonist that inhibits MDM2-p53 interaction (Ki=90 nM) and activates p53. Nutlin-3a binds preferentially to the p53-binding pocket of MDM2, leading to stabilization of p53 and activation of the p53 pathway. Nutlin-3a has antitumor activity.
Targets(IC50)	Apoptosis,E1/E2/E3 Enzyme,Autophagy
In vitro	**METHODS**: N1E-115 cells were treated with Ionomycin calcium (0.2-10 μM) for 3-24 h. Cell viability was determined by trypan blue dye exclusion assay. **RESULTS**: Ionomycin calcium induced cell death in a concentration and time dependent manner. [1] **METHODS**: Fura-2-loaded mouse cerebellar astrocytes were treated with Ionomycin calcium (0.1-10 μM) for 35 min, and cell membrane Ca(2+) concentration was monitored by changes in the Fura-2 340/380 ratio. **RESULTS**: At concentrations ≤1 μM [Ca2+]c slowly declined after the initial peak, reaching significantly lower levels after 35 min. However, at 2 μM of ionomycin the peak level of [Ca2+]c was sustained in the plateau phase, and at concentrations >2 μM ionomycin [Ca2+]c was significantly higher after 35 min than at the initial peak. [2]
In vivo	**METHODS**: To investigate the mechanism of demyelination induced in vivo, Ionomycin calcium (2-50 μM, 0.5 μL) was dorsal column injected into SD rats. **RESULTS**: Rats injected with Ionomycin calcium showed varying degrees of lesions observed from days 1-21, including areas of localized edema, a small number of scattered demyelinated axons, and larger lesions containing up to 200 demyelinated or degenerated axons. [3]
Kinase Assay	Biacore studies: Competition assays are performed on a Biacore S51. A Series S Sensor chip CM5 is derivatized for immobilization of a PentaHis antibody for capture of the His-tagged p53. The level of capture is ~ 200 response units (1 response unit corresponds to 1 pg of protein per mm 2). The concentration of MDM2 protein is kept constant at 300 nM. Test compounds are dissolved in DMSO at 10 mM and further diluted to make a concentration series of inhibitor in each MDM2 test sample. The assays are run at 25 °C in running buffer (10 mM Hepes, 0.15 M NaCl, 2% DMSO). MDM2-p53 binding in the presence of inhibitor is calculated as a percentage of binding in the absence of inhibitor and IC50 is calculated using Microsoft Excel

Cell Research	SRB(Only for Reference)

Solubility Information

Solubility	Ethanol: 58.2 mg/mL (100.09 mM),Sonication is recommended. DMSO: 55 mg/mL (94.58 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7197 mL	8.5986 mL	17.1972 mL
5 mM	0.3439 mL	1.7197 mL	3.4394 mL
10 mM	0.172 mL	0.8599 mL	1.7197 mL
50 mM	0.0344 mL	0.172 mL	0.3439 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

Villalonga-Planells R, et al. Activation of p53 by nutlin-3a induces apoptosis and cellular senescence in human glioblastoma multiforme. PLoS One. 2011 Apr 5;6(4):e18588.
Wang B, et al. MDM2 inhibitor Nutlin-3a suppresses proliferation and promotes apoptosis in osteosarcoma cells. Acta Biochim Biophys Sin (Shanghai). 2012 Aug;44(8):685-91.
Vassilev LT, et al. Science, 2004, 303(5659), 844-848.