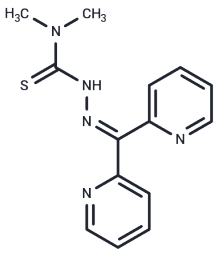
Data Sheet (Cat.No.T6821)

TargetMol

Dp44mT

Chemical Properties



CAS No. : 152095-12-0

Formula: C14H15N5S

Molecular Weight: 285.37

Appearance: no data available

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

Biological Description

Description	Dp44mT, a effective iron chelator, has selective antitumor activity.
Targets(IC50)	Apoptosis,Ferroptosis
In vitro	In MDA-MB-231 cells, Dp44mT selectively targets towards topoisomerase topo2α resulting in DNA damage. Dp44mT inhibits antiproliferative effects significantly with IC50 of 30 nM, 60 nM, and 60 nM for SK-N-MC, SK-Mel-28, and MCF-7 cells, respectively, while showing no effects on normal MRC-5 fibroblasts. In SK-N-MC neuroepithelioma and M109 cells,Dp44mT inhibits cellular Fe uptake from Fe-Tf , and induces cell apoptosis. Dp44mT, as a Pgp substrate, also overcomes multidrug resistance by the hijacking of lysosomal P-glycoprotein (Pgp).
In vivo	Dp44mT (0.4 mg/kg, i.v.) inhibits M109 tumor implanted in CD2F1 mice by a dose-dependent manner.
Cell Research	SK-N-MC, SK-Mel-28, MCF-7 and MRC-5 cells are incubated in the presence and absence of DFO, 311, 3-aminopyridine-2-carboxaldehyde thiosemicarbazone, doxorubicin, and the DpT series of chelators (0-25 μM) for 72 hours at 37°C. The effect of the chelators on proliferation is examined using the MTT assay.
Animal Research	CD2F1 mice that are implanted M109 tumors intravenous inject Dp44mT (dissolved in Propylene glycol) 4 mg/kg in twice daily.

Solubility Information

Solubility	DMSO: 16.67 mg/mL (58.4 mM),Sonication is recommended. Ethanol: 47 mg/mL (164.7 mM),Sonication is recommended. H2O: Insoluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.5042 mL	17.5211 mL	35.0422 mL
5 mM	0.7008 mL	3.5042 mL	7.0084 mL
10 mM	0.3504 mL	1.7521 mL	3.5042 mL
50 mM	0.0701 mL	0.3504 mL	0.7008 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

Yuan J, et al. Blood. 2004, 104(5), 1450-1458.
Rao VA, et al. Cancer Res. 2009, 69(3), 948-957.
Jansson PJ, et al. J Biol Chem. 2015, 290(15), 9588-9603.
Whitnall M, et al. A class of iron chelators with a wide spectrum of potent antitumor activity that overcomes resistance to chemotherapeutics. Proc Natl Acad Sci U S A. 2006 Oct 3;103(40):14901-6.
Yalowich J C , Wu X , Zhang R , et al. The anticancer thiosemicarbazones Dp44mT and triapine lack inhibitory effects as catalytic inhibitors or poisons of DNA topoisomerase IIα[J]. Biochemical Pharmacology, 2012, 84(1):52-58.