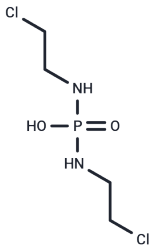
Data Sheet (Cat.No.T4350)

TargetMol®
YOUR TARGET MOLECULES

Palifosfamide

Chemical Properties



CAS No. : 31645-39-3

Formula: C4H11Cl2N2O2P

Molecular Weight: 221.02

Appearance: no data available

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

Biological Description

Description	Palifosfamide (Isophosphamide mustard) lysine (ZIO-201) is a stable form of palifosfamide. Palifosfamide lysine has broad activity in sarcoma lines in vitro. The IC50 ranges from 2.25 to 6.75 μM for most cell lines except OS222 (IC50=31.5 μM).
Targets(IC50)	DNA Alkylator/Crosslinker,DNA Alkylation,Drug Metabolite
In vitro	Differential gene expression of ALDH3A1 but not ALDH1A1 is noted in the OS31 xenograft. Stabilized palifosfamide administered to mice suppresses MX-1 tumor growth by greater than 80% with 17% complete antitumor responses. Oral bioavailability in rats is 48-73% of parenteral administration, and antitumor activity in mice is equivalent by both routes. Treatment with palifosfamide-tris combined with docetaxelor doxorubicin at optimal regimens results in complete tumor regression in 62-75% of mice.
Cell Research	Palifosfamide is dissolved in phosphate buffered saline (PBS). Cells are plated in 96-well microtiter plates with approximately 500 cells per well in 100 μL of media. After 24 h of incubation at 37°C, cells are treated with increasing concentrations of palifosfamide lysine in separate plates either as a single-day treatment or three consecutive days of treatment, with fresh drug being added each day. The plates are incubated for 72 h at 37°C with 5% CO2. After 72 h, 250 μg of MTT is added to each well and incubated at 37°C for 6 h. MTT is converted to formazine crystals by mitochondria of viable cells, which are then dissolved in 100 μL of dimethyl sulfoxide. Optical density is measured at 595 nm.
Animal Research	Mouse: CB17 female SCID mice are used in the study. Once the tumors reached 50–150 mm3, mice are randomized into control and treatment groups (5-8 mice/group) for each tumor line. Cyclophosphamide is administered at the dose of 150 mg/kg intraperitoneally once a week for 6 weeks. Palifosfamide lysine is administered intravenously at the maximum tolerated dose of 100 mg/kg for three consecutive days as a one-time treatment and serial tumor volumes are determined over the next 6 weeks. Mice are sacrificed at the end of the experiment.

Solubility Information

Solubility	DMSO: < 1mg/ml (insoluble) , (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.5245 mL	22.6224 mL	45.2448 mL
5 mM	0.9049 mL	4.5245 mL	9.049 mL
10 mM	0.4524 mL	2.2622 mL	4.5245 mL
50 mM	0.0905 mL	0.4524 mL	0.9049 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

Hingorani P, et al. Preclinical activity of palifosfamide lysine (ZIO-201) in pediatric sarcomas including oxazaphosphorine-resistant osteosarcoma. Cancer Chemother Pharmacol. 2009 Sep;64(4):733-40.