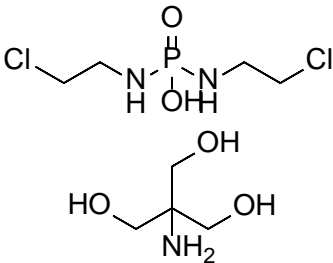


Product data sheet



MedKoo Cat#: 202130 Name: Palifosfamide-Tris CAS: 1070409-31-2 (tris salt) Chemical Formula: C ₈ H ₂₂ Cl ₂ N ₃ O ₅ P Molecular Weight: 342.1538	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Palifosfamide, also known as ZIO201, is a synthetic mustard compound with potential antineoplastic activity. An active metabolite of ifosfamide covalently linked to the amino acid lysine for stability, palifosfamide irreversibly alkylates and cross-links DNA through GC base pairs, resulting in irreparable 7-atom inter-strand cross-links; inhibition of DNA replication and cell death follow. Unlike ifosfamide, this agent is not metabolized to acrolein or chloroacetaldehyde, metabolites associated with bladder and CNS toxicities. In addition, because palifosfamide does not require activation by aldehyde dehydrogenase, it may overcome the tumor resistance seen with ifosfamide.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
TBD	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.92 mL	14.61 mL	29.23 mL
5 mM	0.58 mL	2.92 mL	5.85 mL
10 mM	0.29 mL	1.46 mL	2.92 mL
50 mM	0.06 mL	0.29 mL	0.58 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Hingorani P, Zhang W, Piperdi S, Pressman L, Lin J, Gorlick R, Kolb EA. Preclinical activity of palifosfamide lysine (ZIO-201) in pediatric sarcomas including oxazaphosphorine-resistant osteosarcoma. *Cancer Chemother Pharmacol*. 2009 Sep;64(4):733-40. doi: 10.1007/s00280-008-0922-4. Epub 2009 Feb 18. PMID: 19224214.

In vivo study

1. Jones B, Komarnitsky P, Miller GT, Amedio J, Wallner BP. Anticancer activity of stabilized palifosfamide in vivo: schedule effects, oral bioavailability, and enhanced activity with docetaxel and doxorubicin. *Anticancer Drugs*. 2012 Feb;23(2):173-84. doi: 10.1097/CAD.0b013e32834d73a6. PMID: 22027537.

7. Bioactivity

Biological target:

Palifosfamide, also known as ZIO201, is a synthetic mustard compound with potential antineoplastic activity.

In vitro activity

Product data sheet



The cytotoxic effect of palifosfamide lysine was studied in osteosarcoma (OS), Ewing's sarcoma (ES) and rhabdomyosarcoma (RMS) cell lines using the MTT assay. Palifosfamide lysine was cytotoxic against all the cell lines tested with the IC(50) ranging from 0.5 to 1.5 microg/ml except for OS222, which had an IC(50) of 7 microg/ml.

Reference: Cancer Chemother Pharmacol. 2009 Sep;64(4):733-40. <https://pubmed.ncbi.nlm.nih.gov/19224214/>

In vivo activity

The antitumor activities of stabilized palifosfamide were investigated in vivo. Dose response, route and schedule of administration, and interaction with docetaxel or doxorubicin were investigated in NCr-nu/nu mice bearing established orthotopic mammary MX-1 tumor xenografts. Oral activity was investigated in P388-1 leukemia in CD2F1 mice. Oral and intraperitoneal bioavailabilities were compared in Sprague-Dawley rats. Stabilized palifosfamide administered by optimized regimens suppressed MX-1 tumor growth ($P < 0.05$) by greater than 80% with 17% complete antitumor responses and up to three-fold increase in time to three tumor doublings over control.

Reference: Anticancer Drugs. 2012 Feb;23(2):173-84. <https://pubmed.ncbi.nlm.nih.gov/22027537/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.