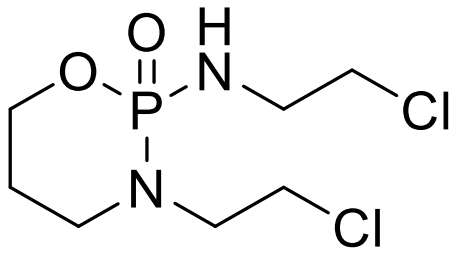
Product data sheet

MedKoo Cat#: 100460 Name: Ifosfamide CAS: 3778-73-2 Chemical Formula: $C_7H_{15}Cl_2N_2O_2P$ Exact Mass: 260.0248 Molecular Weight: 261.0828	
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:
Ifosfamide is a synthetic analogue of the nitrogen mustard cyclophosphamide with antineoplastic activity. Ifosfamide alkylates and forms DNA crosslinks, thereby preventing DNA strand separation and DNA replication. This agent is a prodrug that must be activated through hydroxylation by hepatic microsomal enzymes. Check for active clinical trials or closed clinical trials using this agent. (NCI Thesaurus).

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
DMF	50.0	191.51
DMSO	44.0	168.53
Ethanol	51.0	195.34
PBS (pH 7.2)	10.0	38.30
Water	52.0	199.17

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	3.83 mL	19.15 mL	38.30 mL
5 mM	0.77 mL	3.83 mL	7.66 mL
10 mM	0.38 mL	1.92 mL	3.83 mL
50 mM	0.08 mL	0.38 mL	0.77 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. Multhoff G, Meier T, Botzler C, Wiesnet M, Allenbacher A, Wilmanns W, Issels RD. Differential effects of ifosfamide on the capacity of cytotoxic T lymphocytes and natural killer cells to lyse their target cells correlate with intracellular glutathione levels. Blood. 1995 Apr 15;85(8):2124-31. PMID: 7718883.

In vivo study

1. Han HY, Choi MS, Yoon S, Ko JW, Kim SK, Kim TW. Investigation of Ifosfamide Toxicity Induces Common Upstream Regulator in Liver and Kidney. Int J Mol Sci. 2021 Nov 11;22(22):12201. doi: 10.3390/ijms222212201. PMID: 34830083; PMCID: PMC8617928.
2. Helal M. Prenatal effects of transplacental exposure to ifosfamide in rats. Biotech Histochem. 2016 Jul;91(5):357-68. doi: 10.1080/10520295.2016.1176253. Epub 2016 Apr 28. PMID: 27124550.

Product data sheet

7. Bioactivity

Biological target:

Ifosfamide is an alkylating chemotherapeutic agent with activity against a wide range of tumors.

In vitro activity

An incubation of activated human peripheral blood lymphocytes (PBL) with 4-hydroxyifosfamide, the activated form of ifosfamide (4-OH-IF), resulted in a depletion of the intracellular GSH levels and a significant inhibition of the proliferative capacity in a dose-dependent manner.

Reference: Blood. 1995 Apr 15;85(8):2124-31. https://pubmed.ncbi.nlm.nih.gov/7718883/

In vivo activity

Treatment with high doses of ifosfamide caused small placentas, fewer viable fetuses, greater post-implantation losses and more resorbed fetuses. Reduced progesterone and increased prolactin levels also were found. Immunohistochemical staining, the TUNEL technique and histological studies showed increased apoptotic cells and many histological changes in the placenta, and in fetal brain, liver and kidney tissues. Ifosfamide treatment increased apoptosis and caused hypoplasia of placental basal and labyrinth zones, which resulted in pathological changes in developing fetal tissue.

Reference: Biotech Histochem. 2016 Jul;91(5):357-68. https://pubmed.ncbi.nlm.nih.gov/27124550/

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.