Product Data Sheet

**Chemical Properties**

**Product Name:** Palifosfamide  
**Cas No.:** 31645-39-3  
**M.Wt:** 221.02  
**Formula:** C₄H₁₁Cl₂N₂O₂P  
**Synonyms:** Isophosphoramide mustard; IPM; ZIO-201  
**Chemical Name:** bis(2-chloroethylamino)phosphinic acid  
**Canonical SMILES:** C(CCl)NP(=O)(NCCl)O  
**Solubility:** \( \geq 22.1 \text{mg/mL} \) in DMSO  
**Storage:** Store at -20°C  
**General tips:** For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.  
**Shopping Condition:** Evaluation sample solution: ship with blue ice  
All other available size: ship with RT, or blue ice upon request

**Biological Activity**

**Targets:** DNA Damage/DNA Repair  
**Pathways:** DNA Alkylating  
**Description:**

Palifosfamide is the active moiety of ifosfamide (IFA) [1]. IFA is alkylating agents which are active against a variety of pediatric sarcomas such as rhabdomyosarcoma (RMS), Ewing’s sarcoma (ES), osteosarcoma (OS) and other undifferentiated soft tissue sarcomas [1].

In human OS cell lines SaOS-2, OS229 and OS230, Palifosfamide lysine has broad activity with IC₅₀ ranging from 2.25 to 6.75 \( \mu \text{M} \). While OS222 had the IC₅₀ of 31.5 \( \mu \text{M} \) [1].
In CB17 female SCID mice, palifosfamide lysine (100 mg/kg) administered intravenously for three consecutive days, the mean weight loss was less than 15% and complete recovery to baseline within 4 weeks of treatment. While, doses higher than 100 mg/kg for three consecutive days lead to either greater than 20% loss of body weight or death. In NCr-nu/nu mice bearing established orthotopic mammary MX-1 tumor xenografts, palifosfamide suppressed MX-1 tumor growth by greater than 80% with 17% complete antitumor responses [2].

Reference:

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.