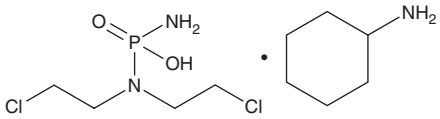
PRODUCT INFORMATION

Phosphoramide Mustard (cyclohexylammonium salt)

Item No. 34078

CAS Registry No.: 1566-15-0
Formal Name: N,N-*bis*(2-chloroethyl)-phosphorodiamidic acid, compd. with cyclohexanamine
Synonyms: NSC 69945, PMC
MF: $C_4H_{11}Cl_2N_2O_2P \bullet C_6H_{13}N$
FW: 320.2
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Phosphoramide mustard (cyclohexylammonium salt) is supplied as a solid. A stock solution may be made by dissolving the phosphoramide mustard (cyclohexylammonium salt) in the solvent of choice, which should be purged with an inert gas. Phosphoramide mustard (cyclohexylammonium salt) is slightly soluble in chloroform and methanol.

Description

Phosphoramide mustard is an alkylating agent and active metabolite of cyclophosphamide (Item No. 13849).[1] It is formed from cyclophosphamide *via* the ring-opened tautomer of the cytochrome P450 (CYP) isoform-formed intermediate 4-hydroxycyclophosphamide.[3] Phosphoramide mustard induces DNA crosslinking, alkylates guanine in DNA, and increases the production of covalent DNA-protein conjugates in, and is cytotoxic to, HT-1080 human fibrosarcoma cells in a concentration-dependent manner. It is toxic to adult mice and teratogenic to embryos when administered to pregnant dams at a dose of 154 mg/kg on day 11 of gestation.[2]

References

1. Groehler, A., IV, Villalta, P.W., Campbell, C., *et al.* Covalent DNA-protein cross-linking by phosphoramide mustard and nornitrogen mustard in human cells. *Chem. Res. Toxicol.* **29(2)**, 190-202 (2016).
2. Gibson, J.E. and Becker, B.A. Teratogenicity of structural truncates of cyclophosphamide in mice. *Teratology* **4(2)**, 141-150 (1971).
3. Huitema, A.D., Mathôt, R.A., Tibben, M.M., *et al.* A mechanism-based pharmacokinetic model for the cytochrome P450 drug-drug interaction between cyclophosphamide and thioTEPA and the autoinduction of cyclophosphamide. *J. Pharmacokinetic. Pharmacodyn.* **28(3)**, 211-230 (2001).

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