Product Datasheet

Phosphoramide mustard cyclohexanamine

Catalog No. **BP-08731** · CAS **1566-15-0** · Form **free base** · Physical state **solid** · Color **White to off-white** · Version **1.0** · Revision **2026-11-12**

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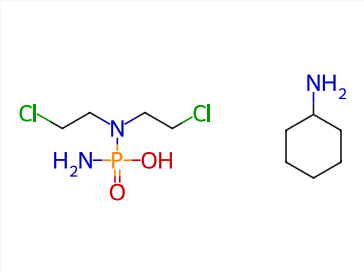
Target	Research area
DNA Alkylator/Crosslinker; Drug Metabolite	**Cancer**

Molecular formula	$C_{10}H_{24}Cl_2N_3O_2P$
Molecular weight	**320.2010**

STRUCTURE



DESCRIPTION

Phosphoramide mustard cyclohexanamine is a biologically active metabolite of Cyclophosphamide , with anticancer activitiy. Phosphoramide mustard cyclohexanamine induces DNA damage .

BIOLOGICAL ACTIVITY

In Vitro

Phosphoramide mustard cyclohexanamine causes cytotoxicity through forming cross-linked DNA adducts which inhibit DNA strand separation during replication[1].

Phosphoramide mustard cyclohexanamine (3-6 μM; 48 hours) reduces cell viability in rat spontaneously immortalized granulosa cells (SIGCs)[1].

Phosphoramide mustard cyclohexanamine (3-6 μM; 24-48 hours) induces DNA adduct formation and ovarian DNA damage[1].

Phosphoramide mustard cyclohexanamine (3-6 μM; 24-48 hours) increases DNA damage responses (DDR) gene mRNA expression levels and DDR proteins[1].

In Vivo

Phosphoramide mustard cyclohexanamine (2.1-20.7 mg/kg; i.p.; daily; for 5 days) inhibits subcutaneous tumor growth in rats[2].

Phosphoramide mustard cyclohexanamine exhibits terminal elimination half-lives (rat 15.1 min) following intravenous administration (rat 59.4 mg/kg)[2].

REFERENCES

[1]. Shanthi Ganesan, et al. Phosphoramide mustard exposure induces DNA adduct formation and the DNA damage repair response in rat ovarian granulosa cells. Toxicol Appl Pharmacol. 2015 Feb 1; 282(3): 252–258. (https://pubmed.ncbi.nlm.nih.gov/25497287/)

[2]. S Genka, et al. Brain and plasma pharmacokinetics and anticancer activities of cyclophosphamide and phosphoramide mustard in the rat. Cancer Chemother Pharmacol. 1990;27(1):1-7. (https://pubmed.ncbi.nlm.nih.gov/2245487/)

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