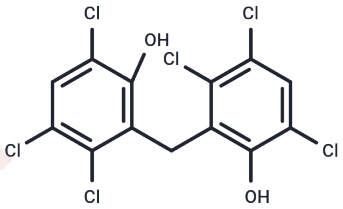
Data Sheet (Cat.No.T62028)

TargetMol

Hexachlorophene

Chemical Properties



CAS No. : 70-30-4

Formula: C13H6Cl6O2

Molecular Weight: 406.9

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Hexachlorophene is an agonist of the KCNQ1/KCNE1 potassium ion channel with an EC50 value of 4.61 μM. Hexachlorophene is also an inhibitor of the Wnt/β-catenin signaling pathway.
Targets(IC50)	Microtubule Associated,Antibacterial,Antifungal,Phosphatase,Potassium Channel,SARS-CoV,Wnt/beta-catenin
In vitro	Hexachlorophene increases KCNQ1/KCNE1 current amplitude within the concentration range of approximately 0.1 - 10 μM, with an EC_{50} value of 4.61 μM, and shortens action potential duration [1]. At a concentration of 10 μM, Hexachlorophene can rescue the loss-of-function of LQT mutants caused by impaired gating or reduced PIP_2 binding affinity in CHO cells [1]. Within the concentration range of 0 - 50 μg/mL (with approximately 30 minutes of treatment), Hexachlorophene exhibits antibacterial activity against Micrococcus sp., Staphylococcus aureus, Staphylococcus epidermidis, and Streptococcus, with IC_{50} values of 0.83 μg/mL, 1.5 μg/mL, 1.75 μg/mL, and 1.3 μg/mL, respectively [2]. At a concentration of 20 μM and after 15 hours of treatment, Hexachlorophene inhibits the Wnt/β-catenin signaling pathway in HEK293 and HCT116 cells through Siah-1-mediated β-catenin degradation [3]. Within the concentration range of 0 - 10 μM and after 48 hours of treatment, Hexachlorophene inhibits the growth of HCT116 cells [3]. Hexachlorophene is a competitive inhibitor of the SARS-CoV 3CL protease, with an IC_{50} value of 5 μM, and forms hydrogen bonds with SARS-CoV 3CL, with an estimated Ki value of 4 μM [4].
In vivo	One day before mice were exposed to Schistosoma mansoni cercariae (Puerto Rico strain, WRAIR source), their tails were treated with a 1.25% w/v Hexachlorophene solution via tail immersion (5 minutes). This treatment exhibited inhibitory activity against schistosome infection in mice [6]. Hexachlorophene possesses acute and subacute toxicity, with a median lethal dose (LD_{50}) range of 21.8–40.0 mg/kg for intraperitoneal injection and 57.6–87.0 mg/kg for oral administration [5].

Solubility Information

Solubility	DMSO: ≥ 80 mg/mL,Sonication is recommended. H2O: < 1mg/mL (insoluble) (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 3.3 mg/mL (8.11 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.4576 mL	12.288 mL	24.5761 mL
5 mM	0.4915 mL	2.4576 mL	4.9152 mL
10 mM	0.2458 mL	1.2288 mL	2.4576 mL
50 mM	0.0492 mL	0.2458 mL	0.4915 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Zheng Y, et al. Hexachlorophene is a potent KCNQ1/KCNE1 potassium channel activator which rescues LQTs mutants. PLoS One. 2012;7(12):e51820.

Lloyd WJ, et al. Cyclohexane triones, novel membrane-active antibacterial agents. Antimicrob Agents Chemother. 1988 Jun;32(6):814-8.

Seoyoung Park, et al. Hexachlorophene inhibits Wnt/beta-catenin pathway by promoting Siah-mediated beta-catenin degradation. Mol Pharmacol. 2006 Sep;70(3):960-6.

Yu-Chih Liu, et al. Screening of drugs by FRET analysis identifies inhibitors of SARS-CoV 3CL protease. Biochem Biophys Res Commun

H S Nakaue, et al. Studies on the toxicity of hexachlorophene in the rat. Toxicol Appl Pharmacol. 1973 Feb;24(2):239-49.

M M Grenan, et al. Hexachlorophene as a topically applied chemical for prophylaxis against Schistosoma mansoni infections in mice. Rev Inst Med Trop Sao Paulo. 1985 Jul-Aug;27(4):190-6.

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