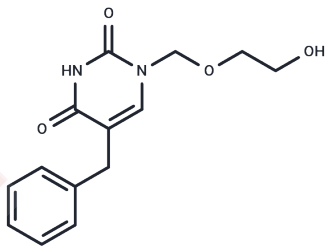
Data Sheet (Cat.No.T40932)

TargetMol

Benzylacyclouridine

Chemical Properties



CAS No. : 82857-69-0

Formula: C14H16N2O4

Molecular Weight: 276.29

Storage: Keep away from direct sunlight,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	Benzylacyclouridine (BAU) is a specific and orally available uridine phosphorylase (UrdPase) inhibitor that plays a major role in the regulation of uridine metabolism and is able to potentiate the toxicity of 5-Fluorouracil against human prostate cancer cells with antitumor potential.
Targets(IC50)	Others
In vitro	Benzylacyclouridine (BAU) is a potent and selective inhibitor of uridine phosphorylase (UrdPase). In multiple human cancer cell lines, BAU increased 5-fluorouracil (5-FU) cytotoxicity when administered prior to 5-FU, demonstrating its potential to sensitize tumor cells to chemotherapy by inhibiting UrdPase activity[1].
In vivo	In dogs and pigs, oral or intravenous Benzylacyclouridine (30 or 120 mg/kg) markedly inhibited uridine degradation and produced sustained increases in plasma uridine ($t_{1/2}$ = 1.8–3.6 h in dogs, 1.6–2.3 h in pigs; tissue:plasma ratio ≈ 0.7). In a Phase I trial in advanced cancer patients, oral Benzylacyclouridine at 200–1600 mg/m² produced dose-linear pharmacokinetics (Cmax = 19–99 μM; $t_{1/2}$ = 3.0–3.9 h) and raised plasma uridine by 120–250%. No dose-limiting toxicity was observed, and 800 mg/m² is recommended as the Phase II starting dose when combined with 5-FU[1].

Solubility Information

Solubility	DMSO: 80 mg/mL (289.55 mM),Sonication is recommended. (< 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 (11.94 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	3.6194 mL	18.0969 mL	36.1939 mL
5 mM	0.7239 mL	3.6194 mL	7.2388 mL
10 mM	0.3619 mL	1.8097 mL	3.6194 mL
50 mM	0.0724 mL	0.3619 mL	0.7239 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

Pizzorno G, et, al. Phase I clinical and pharmacological studies of benzylacyclouridine, a uridine phosphorylase inhibitor. Clin Cancer Res. 1998 May;4(5):1165-75.
Monks A, et, al. Effect of 5-benzylacyclouridine, a potent inhibitor of uridine phosphorylase, on the metabolism of circulating uridine by the isolated rat liver. Biochem Pharmacol. 1983 Jul 1;32(13):2003-9.
Roosild TP, et, al. Implications of the structure of human uridine phosphorylase 1 on the development of novel inhibitors for improving the therapeutic window of fluoropyrimidine chemotherapy. BMC Struct Biol. 2009 Mar 16; 9:14.