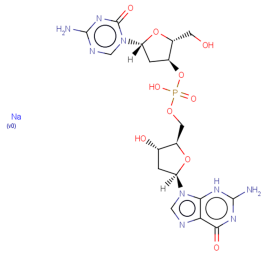
Data Sheet (Cat.No.T12790)

TargetMol

Guadecitabine sodium

Chemical Properties



CAS No. : 929904-85-8

Formula: C18H24N9NaO10P

Molecular Weight: 580.407

Storage: 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	Guadecitabine sodium is a inhibitor of second-generation DNA methyltransferases (DNMT) .
Targets(IC50)	DNA Methyltransferase
In vitro	Treatment of HCT116 colorectal carcinoma cells with Guadecitabine sodium (SGI-110 sodium) demonstrated a dose-dependent increase in p16 expression after 6 days. Additionally, there was a similar increase in p16 protein levels in both T24 and HCT116 cells when treated with Guadecitabine sodium or 5-aza-CdR for 3 days. This effect suggests Guadecitabine sodium's effectiveness in inhibiting DNA methylation and stimulating p16 expression at both mRNA and protein levels, akin to 5-aza-CdR. Further, Guadecitabine sodium inhibited DNA methylation in the 5′-region and induced the expression of the p16 gene in T24 and HCT116 cells at concentrations comparable to those of 5-aza-CdR. The induction of p16 expression by both agents was associated with demethylation at the 5′-end region of the gene in both cell lines. In terms of toxicity, Guadecitabine sodium was slightly less toxic than 5-aza-CdR at concentrations up to 1 μM, but displayed similar toxicity levels at 10 μM concentration[1].
In vivo	Guadecitabine sodium (10mg/kg) effectively reduces DNA methylation, retards tumor growth, and demonstrates a toxicity level comparable to 5-Aza-CdR. It successfully reactivates the expression of the heavily methylated p16 gene in parent EJ6 cells and reduces DNA methylation at the p16 promoter region in vivo. Notably, Guadecitabine sodium exhibits better tolerance compared to 5-Aza-CdR in vivo[2].

Solubility Information

Solubility	DMSO: 50 mg/mL (86.15 mM),Sonication is recommended. H2O: Soluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 2.5 mg/mL (4.31 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	1.7229 mL	8.6146 mL	17.2292 mL
5 mM	0.3446 mL	1.7229 mL	3.4458 mL
10 mM	0.1723 mL	0.8615 mL	1.7229 mL
50 mM	0.0345 mL	0.1723 mL	0.3446 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

Yoo CB, et al. Delivery of 5-aza-2'-deoxycytidine to cells using oligodeoxynucleotides. Cancer Res. 2007 Jul 1;67 (13):6400-8.
Chuang JC, et al. S-110, a 5-Aza-2'-deoxycytidine-containing dinucleotide, is an effective DNA methylation inhibitor in vivo and can reduce tumor growth. Mol Cancer Ther. 2010 May;9(5):1443-50.