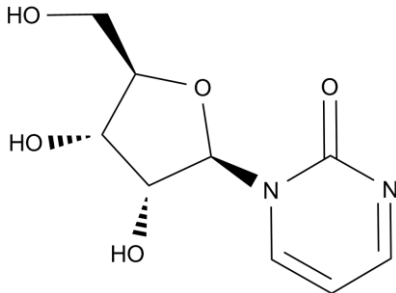


Product Data Sheet

Chemical Properties

Product Name:	Zebularine	
Cas No.:	3690-10-6	
M.Wt:	228.2	
Formula:	C ₉ H ₁₂ N ₂ O ₅	
Synonyms:	NSC 309132	
Chemical Name:	1-[(2R,3R,4S,5R)-3,4-dihydroxy-5-(hydroxymethyl)oxolan-2-yl]pyrimidin-2-one	
Canonical SMILES:	C1=CN(C(=O)N=C1)C2C(C(C(O2)CO)O)O	
Solubility:	≥8.3mg/mL in DMSO, ≥50.7mg/mL in H ₂ O	
Storage:	Store at -20°C	
General tips:	For obtaining a higher solubility , please warm the tube at 37° C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20° C for several months.	
Shopping Condition:	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request	

Biological Activity

Targets : Chromatin/Epigenetics

Pathways: DNA Methyltransferase

Description:

Zebularine, a chemically stable cytidine analog containing a 2-(1H)-pyridimidinone ring, is an effective DNA methylation inhibitor which can act with DNA methyltransferases to form a covalent complex. It has been shown to cause demethylation and reactivation of a silenced and hypermethylated p16 gene. Zebularine is able to induce the myogenic phenotype in 10T1/2 cells, which is a phenomenon unique to DNA methylation inhibitors. zebularine can act as a pro-drug leading to inhibition of DNA methylation and gene activation in fungal and mammalian cells. It

was the only slightly cytotoxic to T24 cells in vitro. Zebularine is stable in aqueous solution up to a pH of 12.

Reference:

C.B. Yoo, J.C. Cheng and P.A. Jones. *Zebularine: a new drug for epigenetic therapy. Biochemical Society Transactions. 2004; 32(6): 910 – 912.*

Jonathan C. Cheng, Cindy B. Matsen, Felicidad A. Gonzales, Wei Ye, Sheldon Greer, Victor E. Marquez, Peter A. Jones, Eric U. Selker. *Inhibition of DNA Methylation and Reactivation of Silenced Genes by Zebularine. Journal of the National Cancer Institute. 2003; 95(5): 399 – 409.*

Protocol

Cell experiment:

Cell lines	10T1/2 cells
Preparation method	The solubility of this compound in DMSO is > 10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below - 20 °C for several months.
Reacting conditions	
Applications	In 10T1/2 cells, Zebularine induced muscle cell formation. However, the 10T1/2 cells treated with Zebularine showed less muscle cell formation than those treated with either 5-Aza-CdR or 5-Aza-CR.

Animal experiment [3]:

Animal models	BALB/c nu/nu mice bearing EJ6 bladder cell xenografts
Dosage form	500 or 1000 mg/kg; i.p. or p.o.
Applications	In BALB/c nu/nu mice bearing EJ6 bladder cell xenografts, Zebularine (1000 mg/kg) significantly reduced tumor volumes when administered by intraperitoneal injection or by oral gavage. Moreover, Zebularine only showed slight cytotoxicity to tumor-bearing mice.
Other notes	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Reference:

[1]. Cheng JC, Matsen CB, Gonzales FA, Ye W, Greer S, Marquez VE, Jones PA, Selker EU. Inhibition of DNA methylation and reactivation of silenced genes by zebularine. *J Natl Cancer Inst.* 2003 Mar 5;95(5):399-409.

Product Citations

1. Griffin PT, Niederhuth CE, Schmitz RJ. "A Comparative Analysis of 5-Azacytidine- and Zebularine-Induced DNA Demethylation." *G3 (Bethesda).* 2016 Sep 8;6(9):2773-80. PMID:27402357

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

ApexBio Technology

www.apexbt.com

7505 Fannin street, Suite 410, Houston, TX 77054.

Tel: +1-832-696-8203 | Fax: +1-832-641-3177 | Email: info@apexbt.com