

## Certificate of Analysis

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**Product Name:** Zebularine

**Catalog No.:** 2293

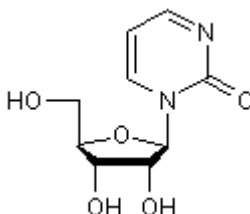
**Batch No.:** 3

CAS Number: 3690-10-6

IUPAC Name: 1-β-D-Ribofuranosyl-2(1*H*)-pyrimidinone

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>9</sub>H<sub>12</sub>N<sub>2</sub>O<sub>5</sub>  
**Batch Molecular Weight:** 228.2  
**Physical Appearance:** White solid  
**Solubility:** water to 100 mM  
 DMSO to 100 mM  
**Storage:** Desiccate at RT  
**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

**TLC:** R<sub>f</sub> = 0.15 (Dichloromethane:Methanol [9:1])  
**HPLC:** Shows >99% purity  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure  
**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	47.37	5.3	12.28
Found	47.4	5.28	12.17

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Description:**

Orally active DNA methyltransferase inhibitor. Inhibits tumor cell proliferation (IC<sub>50</sub> = 120 μM) and re-activates silenced genes in T24 bladder carcinoma cells. Inhibits cytidine deaminase (K<sub>i</sub> ~ 2 μM); induces differentiation of mesenchymal stem cells into cardiomyocytes.

**Physical and Chemical Properties:**

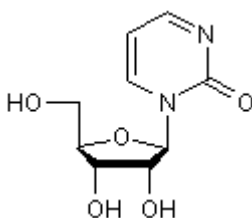
Batch Molecular Formula: C<sub>9</sub>H<sub>12</sub>N<sub>2</sub>O<sub>5</sub>

Batch Molecular Weight: 228.2

Physical Appearance: White solid

**Minimum Purity:** >99%

**Batch Molecular Structure:**



**References:**

**Laliberte et al** (1992) Potent inhibitors for the deamination of cytosine arabinoside and 5-aza-2'-deoxycytidine by human cytidine deaminase. *Cancer Chemother.Pharmacol.* **30** 7. PMID: 1375134.

**Ben-Kasus et al** (2005) Metabolic activation of zebularine, a novel DNA methylation inhibitor, in human bladder carcinoma cells. *Biochem.Pharmacol.* **70** 121. PMID: 15885659.

**Naeem et al** (2012) DNA methylation inhibitors, 5-azacytidine and zebularine potentiate the trans-differentiation of rat bone marrow mesenchymal stem cells into cardiomyocytes. *Cardiovasc.Ther.* [Epub ahead of print].

**Storage:** Desiccate at RT

**Solubility & Usage Info:**

water to 100 mM

DMSO to 100 mM

CAUTION - This product is hygroscopic and we recommend that it is desiccated upon arrival.

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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