

## Certificate of Analysis

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**Product Name:** Cladribine

**Catalog No.:** 5292

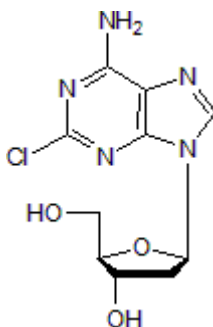
**Batch No.:** 1

CAS Number: 4291-63-8

IUPAC Name: (2*R*,3*S*,5*R*)-5-(6-Amino-2-chloropurin-9-yl)-2-(hydroxymethyl)oxalan-3-ol

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>10</sub>H<sub>12</sub>ClN<sub>5</sub>O<sub>3</sub>  
**Batch Molecular Weight:** 285.69  
**Physical Appearance:** White solid  
**Solubility:** DMSO to 100 mM  
 water to 5 mM with gentle warming  
**Storage:** Store at +4°C  
**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

**HPLC:** Shows 99.6% purity  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	42.04	4.23	24.51
Found	42.04	4.15	24.38

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**Description:**

Adenosine deaminase (ADA)-resistant analog of deoxyadenosine. Exhibits anti-leukemic activity; Inhibits cell growth of lymphoid and myeloid neoplasm (IC<sub>50</sub> = 20 - 87 nM). Pro-apoptotic; induces DNA double-strand breaks. Also inhibits ribonuclease reductase (IC<sub>50</sub> = 0.11 - 0.28 μM). Displays activity in vitro and in vivo. Orally bioavailable.

**Physical and Chemical Properties:**

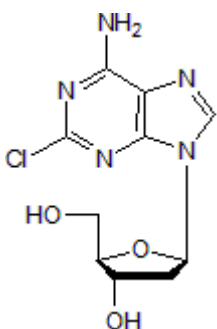
Batch Molecular Formula: C<sub>10</sub>H<sub>12</sub>ClN<sub>5</sub>O<sub>3</sub>

Batch Molecular Weight: 285.69

Physical Appearance: White solid

**Minimum Purity:** >99%

**Batch Molecular Structure:**



**References:**

**Seto et al** (1985) Mechanism of deoxyadenosine and 2-chlorodeoxyadenosine toxicity to nondividing human lymphocytes. *J. Clin. Invest.* **75** 377. PMID: 2579098.

**Bryson et al** (1993) Cladribine. A review of its pharmacodynamic and pharmacokinetic properties and therapeutic potential in haematological malignancies. *Drugs* **46** 872. PMID: 7507037.

**Robak et al** (2006) Older and new formulations of cladribine. Pharmacology and clinical efficacy in hematological malignancies. *Recent Pat. Anticancer Drug Discov.* **1** 23. PMID: 18221024.

**Storage:** Store at +4°C

**Solubility & Usage Info:**

DMSO to 100 mM  
water to 5 mM with gentle warming

**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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