Product Name: Cladribine

CAS Number: 4291-63-8

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

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: \( \text{C}_{10}\text{H}_{12}\text{ClN}_{5}\text{O}_{3} \)

Batch Molecular Weight: 285.69

Physical Appearance: White solid

Solubility: DMSO to 100 mM

Storage: Store at +4°C

2. ANALYTICAL DATA

HPLC: Shows 99.6% purity

\(^1\text{H NMR:}\) Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

<table>
<thead>
<tr>
<th></th>
<th>Carbon</th>
<th>Hydrogen</th>
<th>Nitrogen</th>
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<tr>
<td>Theoretical</td>
<td>42.04</td>
<td>4.23</td>
<td>24.51</td>
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<tr>
<td>Found</td>
<td>42.04</td>
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</table>
**Product Name:** Cladribine  
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**Description:**
Adenosine deaminase (ADA)-resistant analog of deoxyadenosine. Exhibits anti-leukemic activity; Inhibits cell growth of lymphoid and myeloid neoplasm ($IC_{50} = 20 - 87$ nM).
Pro-apoptotic; induces DNA double-strand breaks. Also inhibits ribonuclease reductase ($IC_{50} = 0.11 - 0.28 \mu M$). Displays activity in vitro and in vivo. Orally bioavailable.

**Physical and Chemical Properties:**
- **Batch Molecular Formula:** $C_{10}H_{12}ClN_5O_3$
- **Batch Molecular Weight:** 285.69
- **Physical Appearance:** White solid
- **Minimum Purity:** >99%

**Batch Molecular Structure:**

![Molecular Structure](image)

**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.

**References:**
