

Product Data Sheet

Product Name: Cladribine

Cat. No.: GC10509

Chemical Properties

Cas. No. 4291-63-8

Chemical Name (2R,3S,5R)-5-(6-amino-2-chloropurin-9-yl)-2-(hydroxymethyl)oxolan-3-ol

SMILES C1C(C(OC1N2C=NC3=C2N=C(N=C3N)Cl)CO)O

Formula $C_{10}H_{12}ClN_5O_3$ M.Wt 285.69

Solubility $\geq 41.7\text{mg/mL}$ in DMSO with gentle warming Storage 4°C , protect from light

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.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

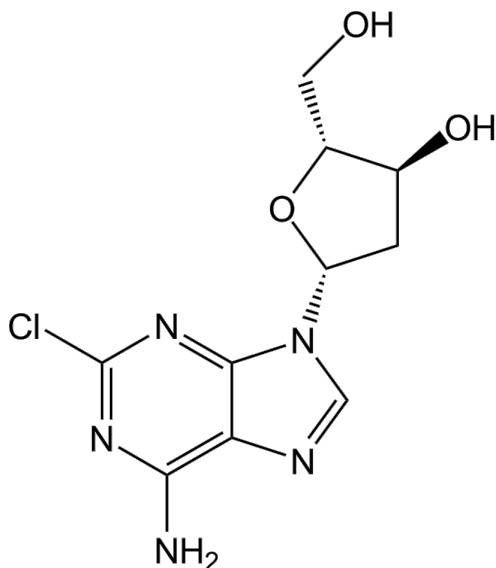
Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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Structure



Background

Cladribine is an adenosine deaminase inhibitor. Adenosine deaminase is an enzyme that involved in purine metabolism.

Cladribine is a well-known purine nucleoside analog with particular activity against lymphoproliferative disorders, such as hairy cell leukemia (HCL). In U266, RPMI8226 and MM1.S cells, Cladribine inhibited cell proliferation in a dose-dependant way with IC₅₀ value of 2.43, 0.75 and 0.18 $\mu\text{mol/L}$, respectively. Apoptosis assays showed that Cladribine induced apoptosis of U266, RPMI8226 and MM1.S cells in a dose-dependant way [1]. In MM1.S cells, Cladribine (0.2 μM) induces activation of caspase-3, -8, and -9 and PARP cleavage in a time-dependent way and reduces the phospho-STAT3 levels in a dose-dependent way. Also, Cladribine induces accumulation of DNA strand breaks and then activates the tumor suppressor p53 in lymphocytes [1].

In the treatment of indolent lymphoid malignancies, lower doses of Cladribine (5 mg/m²/week) are highly active and possibly better tolerated than standard doses [2].

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References:

- [1]. Ma J, Wang S, Zhao M, et al. Therapeutic potential of cladribine in combination with STAT3 inhibitor against multiple myeloma. *BMC Cancer*, 2011, 11: 255.
- [2]. Robak T, Korycka A, Robak E. Older and new formulations of cladribine. *Pharmacology and clinical efficacy in hematological malignancies. Recent Pat Anticancer Drug Discov*, 2006, 1(1): 23-38.

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