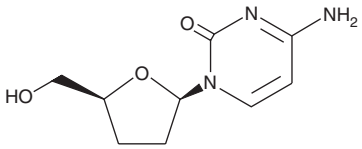
PRODUCT INFORMATION

Zalcitabine

Item No. 16019

CAS Registry No.: 7481-89-2
Formal Name: 2',3'-dideoxy-cytidine
Synonyms: ddC, 2',3'-Dideoxycytidine, NSC 606170, Ro 24-2027/000
MF: $C_9H_{13}N_3O_3$
FW: 211.2
Purity: ≥95%
UV/Vis.: λ_{max}: 273 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Zalcitabine is supplied as a crystalline solid. A stock solution may be made by dissolving the zalcitabine in the solvent of choice, which should be purged with an inert gas. Zalcitabine is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of zalcitabine in these solvents is approximately 0.2 and 0.1 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of zalcitabine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of zalcitabine in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Zalcitabine is a nucleoside reverse transcriptase inhibitor (NRTI).[1] It is phosphorylated intracellularly to its active form zalcitabine-5'-triphosphate by the successive actions of deoxycytidine kinase, deoxycytidine monophosphate kinase, and nucleoside diphosphate kinase.[2] Zalcitabine reduces the replication of laboratory-adapted and clinical isolates of HIV in a plaque reduction assay (IC_{50}s = 0.013-0.08 µM).[3] Formulations containing zalcitabine have been used in the treatment of HIV infection.

References

1. Devineni, D. and Gallo, J.M. Zalcitabine. Clinical pharmacokinetics and efficacy. *Clin. Pharmacokinet.* **28(5)**, 351-360 (1995).
2. Anderson, P.L., Nakuda, T.K., and Lichtenstein, K.A. The cellular pharmacology of nucleoside- and nucleotide-analogue reverse-transcriptase inhibitors and its relationship to clinical toxicities. *Clin. Infect. Dis.* **38(5)**, 743-753 (2004).
3. Larder, B.A., Chesebro, B., and Richman, D.D. Susceptibilities of zidovudine-susceptible and -resistant human immunodeficiency virus isolates to antiviral agents determined by using a quantitative plaque reduction assay. *Antimicrob. Agents Chemother.* **34(3)**, 436-441 (1990).

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