

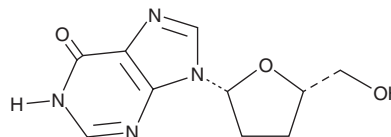
# PRODUCT INFORMATION



## Didanosine

Item No. 23715

**CAS Registry No.:** 69655-05-6  
**Formal Name:** 2',3'-dideoxy-inosine  
**Synonyms:** ddl, 2',3'-Dideoxyinosine, NSC 612049  
**MF:** C<sub>10</sub>H<sub>12</sub>N<sub>4</sub>O<sub>3</sub>  
**FW:** 236.2  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 246 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

Didanosine is supplied as a crystalline solid. A stock solution may be made by dissolving the didanosine in the solvent of choice, which should be purged with an inert gas. Didanosine is soluble in the organic solvent DMSO at a concentration of approximately 10 mg/ml.

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 didanosine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of didanosine in 0.1 M HCl is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Didanosine is an antiviral nucleoside analog and an inhibitor of reverse transcriptase.<sup>1</sup> It undergoes cellular amination and phosphorylation to its active triphosphate form, 2',3'-dideoxyadenosine 5'-triphosphate (ddATP; Item No. 17460). Didanosine inhibits human T cell leukemia virus type 1 (HTLV-1) reverse transcriptase activity (IC<sub>50</sub> = 30 nM).<sup>2</sup> It inhibits the replication of HIV-1 clinical isolates containing various mutations in the gene encoding reverse transcriptase, *pol*, in isolated human peripheral blood mononuclear cells (PBMCs; IC<sub>50</sub>s = 0.3-11.1 μM).<sup>3</sup> Didanosine inhibits proliferation and differentiation of primary human skeletal muscle cells (IC<sub>50</sub>s = 1 and 0.1 mM, respectively), as well as decreases the activities of mitochondrial complex IV, also known as cytochrome c oxidase, and mitochondrial complex II, also known as succinate dehydrogenase, in the same cells when used at a concentration of 1 mM.<sup>4</sup> *In vivo*, didanosine protects mice from HIV infection (EC<sub>50</sub> = 13.7 mg/kg).<sup>5</sup> Formulations containing didanosine have been used in the treatment of HIV-1 infections.

### References

1. Perry, C.M. and Noble, S. *Drugs* **58(6)**, 1099-1135 (1999).
2. Anantharaman, V. and Moen, L.K. *Bioorg. Chem.* **28(5)**, 293-305 (2000).
3. Eron, J.J., Chow, Y.-K., Caliendo, A.M., et al. *Antimicrob. Agents Chemother.* **37(7)**, 1480-1487 (1993).
4. Benbrik, E., Chariot, P., Bonavaud, S., et al. *J. Neurol. Sci.* **149(1)**, 19-25 (1997).
5. Kaneshima, H., Shih, C.C., Namikawa, R., et al. *Proc. Natl. Acad. Sci. USA* **88(10)**, 4523-4527 (1991).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/22/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM