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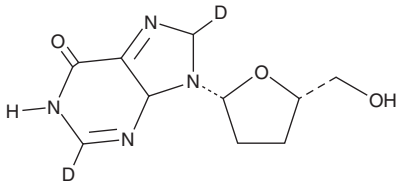
PRODUCT INFORMATION

Didanosine-d_2

Item No. 30078

Formal Name: 2',3'-dideoxy-inosine-2,8-d_2
Synonyms: ddI-d_2, 2′,3′-Dideoxyinosine-d_2
MF: $C_{10}H_{12}D_2N_4O_3$
FW: 240.3
Chemical Purity: ≥98% (Didanosine)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_2); ≤1% d_0
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Didanosine-d_2 is intended for use as an internal standard for the quantification of didanosine (Item No. 23715) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Didanosine-d_2 is supplied as a solid. A stock solution may be made by dissolving the didanosine-d_2 in the solvent of choice. Didanosine-d_2 is soluble in organic solvents such as methanol and DMSO, which should be purged with an inert gas.

Description

Didanosine is an antiviral nucleoside analog and an inhibitor of reverse transcriptase.[1] 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_{50} = 30 nM).[2] 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_{50}s = 0.3-11.1 µM).[3] Didanosine inhibits proliferation and differentiation of primary human skeletal muscle cells (IC_{50}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.[4] *In vivo*, didanosine protects mice from HIV infection (EC_{50} = 13.7 mg/kg).[5] Formulations containing didanosine have been used in the treatment of HIV-1 infections.

References

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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).

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