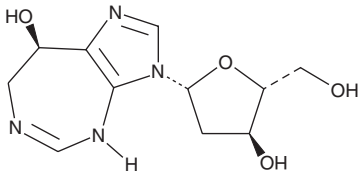
PRODUCT INFORMATION

Pentostatin

Item No. 14878

CAS Registry No.:	53910-25-1
Formal Name:	(8R)-3-(2-deoxy-β-D-*erythro*-pentofuranosyl)-3,4,7,8-tetrahydro-imidazo[4,5-d][1,3]diazepin-8-ol
Synonyms:	CI 825, CL 67310465, DCF, 2′-Deoxycoformycin, Deoxycoformycin, NSC 218321, NSC 247520
MF:	$C_{11}H_{16}N_4O_4$
FW:	268.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 286 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

Pentostatin is supplied as a crystalline solid. A stock solution may be made by dissolving the pentostatin in the solvent of choice, which should be purged with an inert gas. Pentostatin 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 pentostatin can be prepared by directly dissolving the rystalline solid in aqueous buffers. The solubility of pentostatin in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Pentostatin is a purine antimetabolite and an adenosine deaminase (ADA) inhibitor (K_i = 0.09 nM).[1,2] It reduces 2'-deoxyadenosine-induced growth inhibition of MOLT-4 lymphoblast cells (K_i = 5.6 µM). It inhibits erythrocyte and ascites tumor cell ADA in an L1210 murine skin lymphocytic leukemia model when administered at a dose of 0.2 mg/kg.[3] Pentostatin (10 µg/animal) inhibits tumor growth and increases survival rate in a CT26/NY-ESO-1 mouse xenograft model.[2] Formulations containing pentostatin have been used in the treatment of hairy cell leukemia.

References

1. Shewach, D.S., Krawczyk, S.H., Acevedo, O.L., *et al.* Inhibition of adenosine deaminase by azapurine ribonucleosides. *Biochem. Pharmacol.* **44(9)**, 1697-1700 (1992).
2. Tusup, M., Kündig, T.M., and Pascolo, S. Epitranscriptomics modifier pentostatin indirectly triggers Toll-like receptor 3 and can enhance immune infiltration in tumors. *Mol. Ther.* **30(3)**, 1163-1170 (2022).
3. Agarwal, R.P. Recovery of 2'-deoxycoformycin-inhibited adenosine deaminase of mouse erythrocytes and leukemia L1210 *in vivo*. *Cancer Res.* **39(4)**, 1425-1427 (1979).

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