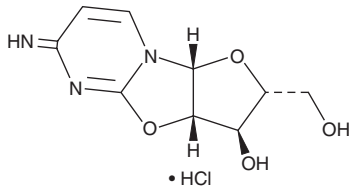
PRODUCT INFORMATION

Cyclocytidine (hydrochloride)

Item No. 29014

CAS Registry No.:	10212-25-6
Formal Name:	(2R,3R,3aS,9aR)-tetrahydro-3-hydroxy-6-imino-6H-furo[2′,3′:4,5]oxazolo[3,2-a]pyrimidine-2-methanol, monohydrochloride
Synonyms:	Ancitabine hydrochloride, NSC 145668, 2,2′-O-Cyclocytidine hydrochloride
MF:	$C_9H_{11}N_3O_4$ • HCl
FW:	261.7
Purity:	≥95%
UV/Vis.:	λ_{max}: 235, 266 nm
Supplied as:	A crystalline 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

Cyclocytidine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the cyclocytidine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Cyclocytidine (hydrochloride) is slightly soluble in ethanol, DMSO, and dimethyl formamide.

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 cyclocytidine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of cyclocytidine (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Cyclocytidine is a prodrug form of cytarabine (Item No. 16069) that is hydrolyzed to cytarabine *in vivo*.[1] It inhibits the growth of L5178Y leukemia cells *in vitro* (IC_{50} = 0.041 µg/ml) and inhibits DNA synthesis by inhibiting thymidine incorporation into DNA (IC_{50} = 110 µg/ml).[2] It increases lifespan in an L1210 mouse model of leukemia when administered at doses ranging from 3 to 1,000 mg/kg per day.[1] Cyclocytidine transiently increases blood pressure in dogs, cats, and rats when administered at doses ranging from 5 to 100 mg/kg and induces postural hypotension in dogs, an effect that can be blocked by the α-adrenergic receptor antagonist phentolamine (Item No. 16135).[3]

References

1. Hoshi, A., Kanazawa, F., Kuretani, K., *et al.* 2,2'-O-cyclocytidine, an antitumor cytidine analog resistant to cytidine deaminase. *Gan.* **62(2),** 145-146 (1971).
2. Hoshi, A., Yoshida, M., Kanzawa, F., *et al.* Inhibition by cyclocytidine of nucleic acid biosynthesis in cultured cells (L5178Y). *Chem. Pharm. Bull. (Tokyo)* **21(7),** 1446-1450 (1973).
3. Burks, T.F., Loo, T.L., and Grubb, M.N. Mechanism of the cardiovascular actions of cyclocytidine. *Proc. Soc. Exp. Biol. Med.* **159(3),** 374-379 (1978).

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