

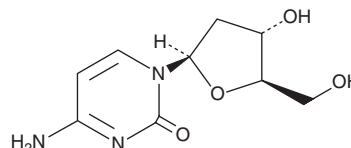
PRODUCT INFORMATION



2'-Deoxycytidine

Item No. 34708

CAS Registry No.: 951-77-9
Formal Name: 2'-deoxy-cytidine
Synonym: dC
MF: $C_9H_{13}N_3O_4$
FW: 227.2
Purity: $\geq 98\%$
UV/Vis.: λ_{\max} : 272 nm
Supplied as: A 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

2'-Deoxycytidine is supplied as a solid. A stock solution may be made by dissolving the 2'-deoxycytidine in the solvent of choice, which should be purged with an inert gas. 2'-Deoxycytidine is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 2'-deoxycytidine in these solvents is approximately 30 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 2'-deoxycytidine can be prepared by directly dissolving the solid in aqueous buffers. The solubility of 2'-deoxycytidine in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

2'-Deoxycytidine is a deoxyribonucleoside composed of a deoxyribose sugar and a cytosine base.¹ It is phosphorylated by deoxycytidine kinase in the cytosol or thymidine kinase 2 (TK2) in mitochondria to form deoxycytidine monophosphate (dCMP; Item No. 29340).^{2,3} Oral administration of 2'-deoxycytidine in combination with deoxythymidine delays disease onset and increases lifespan in a Tk2 H126N knock-in (*Tk2*^{-/-}) mouse model of TK2 deficiency.³

References

1. Berg, J.M., Tymoczko, J.L., and Stryer, L. Nucleotide Biosynthesis. *Biochemistry*. 5th edition, W.H. Freeman (2002).
2. Momparler, R.L. and Fischer, G.A. Mammalian deoxynucleoside kinases. I. Deoxycytidine kinase: Purification, properties, and kinetic studies with cytosine arabinoside. *J. Biol. Chem.* **243**(16), 4298-4304 (1968).
3. Lopez-Gomez, C., Levy, R.J., Sanchez-Quintero, M.J., *et al.* Deoxycytidine and deoxythymidine treatment for thymidine kinase 2 deficiency. *Ann. Neurol.* **81**(5), 641-652 (2017).

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.

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