

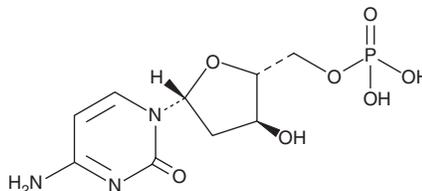
PRODUCT INFORMATION



2'-Deoxycytidine-5'-monophosphate

Item No. 29340

CAS Registry No.: 1032-65-1
Formal Name: 2'-deoxy-5'-cytidylic acid
Synonyms: dCMP, Deoxycytidylate
MF: C₉H₁₄N₃O₇P
FW: 307.2
Purity: ≥95%
UV/Vis.: λ_{max}: 277 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-5'-monophosphate (dCMP) is supplied as a solid. Aqueous solutions of dCMP can be prepared by directly dissolving the solid in aqueous buffers. The solubility of dCMP in PBS, pH 7.2, is approximately 0.3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

dCMP is a deoxyribonucleotide.¹ It is formed *via* phosphorylation of deoxycytidine by deoxycytidine kinase in the cytosol or thymidine kinase 2 (TK2) in mitochondria.^{2,3} It is further phosphorylated by UMP-CMP kinase to form dCDP (Item No. 22982) during nucleic acid synthesis.⁴ dCMP (700 mg/kg) decreases hydroxyurea-induced neuroepithelial cell necrosis in embryonic mouse spinal cord when administered to pregnant dams.⁵ Oral administration of dCMP in combination with dTMP increases lifespan in a *Tk2 H126N* knock-in mouse model of TK2 deficiency.³

References

1. Berg, J.M., Tymoczko, J.L., and Stryer, L. Nucleotide Biosynthesis. *Biochemistry*. 5th ed., 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).
4. Hsu, C.-H., Liou, J.-Y., Dutschman, G.E., *et al.* Phosphorylation of cytidine, deoxycytidine, and their analog monophosphates by human UMP/CMP kinase is differentially regulated by ATP and magnesium. *Mol. Pharmacol.* **67(3)**, 806-814 (2005).
5. Herken, R. The influence of deoxycytidine monophosphate (dCMP) on the cytotoxicity of hydroxyurea in the embryonic spinal cord of the mouse. *Teratology* **30(1)**, 83-90 (1984).

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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