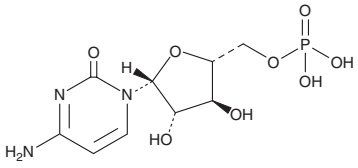
PRODUCT INFORMATION

Cytarabine 5′-monophosphate

Item No. 36496

CAS Registry No.: 7075-11-8
Formal Name: 4-amino-1-(5-O-phosphono-β-D-arabinofuranosyl)-2(1H)-pyrimidinone
Synonyms: ara-CMP, 1-β-D-Arabinofuranosylcytosine 5'-monophosphate, Cytosine Arabinoside monophosphate, NSC 99445
MF: $C_9H_{14}N_3O_8P$
FW: 323.2
Purity: ≥95%
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

Cytarabine 5′-monophosphate (ara-CMP) is supplied as a solid. A stock solution may be made by dissolving the ara-CMP in water. We do not recommend storing the aqueous solution for more than one day.

Description

ara-CMP is an active metabolite of the nucleoside analog cytarabine (Item No. 16069).[1] It is formed from cytarabine by deoxycytidine kinase.[2] ara-CMP is incorporated into DNA by DNA polymerase α, which slows the rate of DNA synthesis by approximately 2,000-fold in a cell-free assay.[3] It inhibits nuclear and mitochondrial DNA replication in *S. cerevisiae* when used at a concentration of 15 mM.[4] ara-CMP (3.5-75.1 mg/kg) improves survival in an L1210 murine leukemia model.[5]

References

1. Huang, S., Liu, L., Liu, X., *et al*. Development and application of a rapid and sensitive liquid chromatography-mass spectrometry method for simultaneous analysis of cytarabine, cytarabine monophosphate, cytarabine diphosphate and cytarabine triphosphate in the cytosol and nucleus. *J. Pharm. Biomed. Anal.* **211**, 114582 (2022).
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. Perrino, F.W. and Mekosh, H.L. Incorporation of cytosine arabinoside monophosphate into DNA at internucleotide linkages by human DNA polymerase α. *J. Biol. Chem.* **267(32)**, 23043-23051 (1992).
4. Mcintosh, E.M., Kunz, B.A., and Haynes, R.H. Inhibition of DNA replication in *Saccharomyces cerevisiae* by araCMP. *Curr. Genet.* **10(8)**, 579-585 (1986).
5. Schrecker, A.W. and Goldin, A. Antitumor effect and mode of action of 1-β-D-arabinofuranosylcytosine 5'-phosphate in leukemia L1210. *Cancer Res.* **28(4)**, 802-803 (1968).

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