

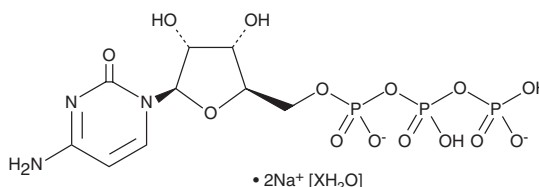
PRODUCT INFORMATION



Cytidine 5'-triphosphate (sodium salt hydrate)

Item No. 18147

CAS Registry No.: 652154-13-7
Formal Name: cytidine 5'-(tetrahydrogen triphosphate), disodium salt, hydrate
Synonyms: CTP, NSC 20261
MF: $C_9H_{14}N_3O_{14}P_3 \cdot 2Na [XH_2O]$
FW: 527.1
Purity: $\geq 95\%$
UV/Vis.: λ_{max} : 275 nm
Supplied as: A crystalline solid
Storage: $-20^\circ C$
Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Cytidine 5'-triphosphate (CTP) (sodium salt hydrate) is supplied as a crystalline solid. CTP (sodium salt hydrate) is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. For biological experiments, we suggest that organic solvent-free aqueous solutions of CTP (sodium salt hydrate) be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of CTP (sodium salt hydrate) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

CTP is a pyrimidine nucleoside triphosphate that is involved in a variety of biochemical reactions. It is used in the synthesis of RNA by RNA polymerases. In the formation of phosphatidylcholine (PC), CTP reacts with phosphocholine, via CTP:phosphocholine cytidyltransferases, to produce CDP-choline and diphosphate.^{1,2} This is the rate-limiting step in PC synthesis and, as a pivotal step in cell proliferation, can be important in cancer.³ CTP also interacts with N-acetylneuraminic acid, in a reaction mediated by N-acetylneuraminic acid cytidyltransferase, to generate an intermediate that is required for sialylation, namely CMP-N-acetylneuraminic acid.⁴

References

1. Li, Z. and Vance, D.E. Phosphatidylcholine and choline homeostasis. *J. Lipid Res.* **49(6)**, 1187-1194 (2008).
2. Lagace, T.A. and Ridgway, N.D. The role of phospholipids in the biological activity and structure of the endoplasmic reticulum. *Biochim. Biophys. Acta.* **1833(11)**, 2499-2510 (2013).
3. Arsenaault, D.J., Yoo, B.H., Rosen, K.V., et al. ras-Induced up-regulation of CTP:phosphocholine cytidyltransferase contributes to malignant transformation of intestinal epithelial cells. *J. Biol. Chem.* **288(1)**, 633-643 (2013).
4. Vionnet, J., Concepcion, N., Warner, T., et al. Purification of CMP-N-acetylneuraminic acid synthetase from bovine anterior pituitary glands. *Glycobiology* **9(5)**, 481-487 (1999).

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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