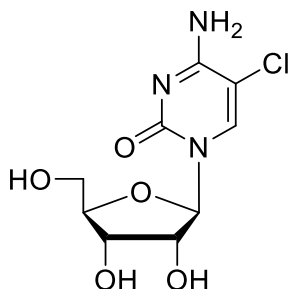


Technical Information about 5- Chlorocytidine

Potential biomarker for chlorine-stressed RNA

Update: September 17, 2018 HJ



Abbreviation: 5-Cl-C

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat.No.
C ₉ H ₁₂ ClN ₃ O ₅	[25130-29-4]	277.7	λ _{max} 287 nm / ε 7250 / pH 7	C 034

Name: 5- Chlorocytidine

Description: 5-Cl-C is an analogue of cytidine where the hydrogen in position 5 of the heterocyclic nucleobase is replaced by a chlorine atom.

Properties: 5-Cl-C is of interest as a reference material for research on chlorine-stressed RNA. For other chlorinated structures related, please inquire.

Specification: Crystallized or lyophilized solid. Please keep in mind that equal amounts of the compound may look different in volume depending on humidity. Micromolar quantities are determined by UV at λ_{max}.

Purity: Typical analysis is better than 98% (HPLC / UV / 287 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: 5-Cl-C has limited solubility in cold water. However, if warmed up to 50°C, better solubility can be achieved. When opening the tube please make sure that no substance is lost within the cap. Please rinse tube walls carefully and preferably use ultrasonic or vortex to achieve total and uniform mixing.

Stability and Storage: 5-Cl-C has sufficient stability at room temperature and does not need special care during handling or shipment. Nevertheless, we recommend that the compound should be stored in the freezer, for longer storage periods preferably in freeze-dried form.

Toxicity and Safety: Since cytidine has multiple tasks in every organism, it is very likely that lipophilic analogues could interfere with many cell regulation processes *in vivo*. However, due to the rather small quantities to work with, no health hazards have been reported. Nevertheless please keep in mind that the *in vivo* properties of this compound are not sufficiently characterized up to now. Avoid skin contact or ingestion and allow only trained personnel to handle the product.

Our products are designed, developed and sold for research purposes only. They are intended for *in vitro* and nonhuman *in vivo* laboratory applications. Any other use requires approval of health authorities.

Not for drug, household or related uses!

Selected References for 5-Cl-C:

Stanley, N.R.; Pattison, D.I.; Hawkins, C.L., *Chem. Res. Toxicol.*, **23**, 1293 - 1302 (2010): "Ability of Hypochlorous Acid and N-Chloramines to Chlorinate DNA and Its Constituents"

Badouard, C.; Masuda, M.; Nishino, H.; Cadet, J.; Favier, A.; Ravanat, J.L., *J. Chromatogr. B Analyt. Technol. Biomed. Life Sci.*, **827**, 26 - 31 (2005): "Detection of Chlorinated DNA and RNA Nucleosides by HPLC Coupled to Tandem Mass Spectrometry as Potential Biomarkers of Inflammation"

Masuda, M.; Suzuki, T.; Friesen, M.D.; Ravanat, J.L.; Cadet, J.; Pignatelli, B.; Nishino, H.; Ohshima, H., *J. Biol. Chem.*, **276**, 40486 - 40496 (2001): "Chlorination of Guanosine and Other Nucleosides by Hypochlorous Acid and Myeloperoxidase of Activated Human Neutrophils. Catalysis by Nicotine and Trimethylamine"