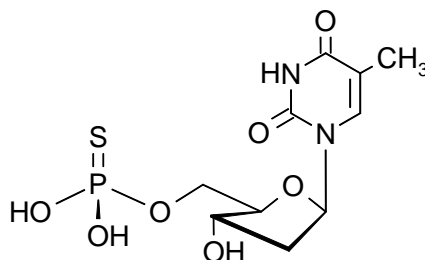


Technical Information about Thymidine- 5'- O- monophosphorothioate (5'-TMPS)

Update: December 20, 2012 MP



Abbreviation: 5'-TMPS

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₀ H ₁₅ N ₂ O ₇ PS	[15548-51-3]	338.3 (free acid)	λ _{max} 267 nm / ε 9600 / pH 7	T 004

Name: Thymidine- 5'- O- monophosphorothioate, sodium salt

Description: 5'-TMPS is an analogue of thymidine-5'-O-monophosphate (5'-TMP), where one of the oxygen atoms in the phosphate moiety has been replaced by sulfur.

Properties: Potential substrate, competitive inhibitor or regulator of enzymes that interact with thymidine-5'-monophosphate. The phosphorothioate usually results in slower hydrolysis by metabolizing enzymes and offers the possibility of coupling other structures with thiol groups under formation of a disulfide bond.

Specification: Crystallized or lyophilized sodium salt. Other salt forms of 5'-TMPS are available upon request. Equal concentrations of 5'-TMPS can appear very different in volume due to sensitivity of the lyophilized form to humidity. The compound can even contract to small volume droplets. Normally the product is located in the conical bottom of the tube. Micro molar quantities are determined by UV at λ_{max}.

Purity: Typical analysis is better than 97% (HPLC / UV / 267 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: 5'-TMPS has excellent solubility in water or buffer systems. Please rinse tube walls carefully and preferably use ultrasonic or vortex to achieve total and uniform mixing. When opening the tube please make sure that no substance is lost within the cap.

Stability and Storage: 5'-TMPS 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 5'-TMP has multiple tasks in every organism, it is not unlikely that lipophilic analogues will 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!

P.t.o.

Selected References for 5'-TMPS:

Golos, B.; Dzik, J.M.; Kazmierczuk, Z.; Ciesla, J.; Zielinski, Z.; Jankowska, J.; Kraszewski, A.; Stawinski, J.; Rode, W.; Shugar, D, *Biol. Chem.*, **382**, 1439 - 1445 (2001): "Interaction of Thymidylate Synthase with the 5'-Thiophosphates, 5'-Dithiophosphates, 5'-H-Phosphonates and 5'-S-Thiosulfates of 2'-Deoxyuridine, Thymidine and 5-Fluoro-2'-deoxyuridine"

Eckstein, F.; Sternbach, H., *Biochim. Biophys. Acta*, **146**, 618 - 619 (1967): "Nucleoside 5'-O-Phosphorothioates as Inhibitors for Phosphatases"