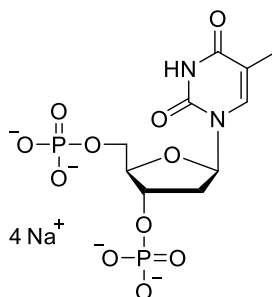


Technical Information about pTp

Update: July 25, 2019 HU



pTp

Abbreviation:

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₀ H ₁₆ N ₂ O ₁₁ P ₂ for free acid	[2863-04-9]	402.2 for free acid	λ _{max} 267 nm / ε 9600 / pH 7	T 012

Name: Thymidine- 3', 5'- O- bisphosphate (pTp) / 2'- Deoxythymidine- 3', 5'- O- bisphosphate (pdTp)

Description: In pTp phosphate groups are attached to both the ribose 3' position and the ribose 5' position of thymidine. Since thymidine already describes a 2'-deoxy nucleoside, the term "2'-deoxythymidine" is redundant.

Properties: pTp is a competitive inhibitor of staphylococcal nuclease and is accepted by T4 RNA ligase to build oligodeoxyribonucleotides.

Specification: Crystallized or lyophilized sodium salt. For other salt forms or analogues of pTp please inquire. Please keep in mind that equal concentrations of the compound may look different in volume due to high 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. Micromolar quantities are determined by UV at λ_{max}.

Purity: Typical analysis is better than 95% (HPLC / UV / 267 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: pTp has good solubility in water (≥ 100 mM). 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: pTp is chemically rather stable 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: 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 pTp:

Caudy, A.A.; Ketting, R.F.; Hammond, S.M.; Denli, A.M.; Bathoorn, A.M.P.; Tops, B.B.J.; Sylva, J.M.; Myers, M.M.; Hannon, G.J.; Plasterk, R.H.A., *Nature*, **425**, 411 - 414 (2003): "A Micrococcal Nuclease Homologue in RNAi Effector Complexes"

Nandanani, E.; Camaioni, E.; Jang, S.-Y.; Kim, Y.-C.; Cristalli, G.; Herdewijin, P.; Secrist, III J.A.; Tiwari, K.N.; Mohanram, A.; Harden, T.K.; Boyer, J.L.; Jacobson, K.A., *J. Med. Chem.*, **42**, 1625 - 1638 (1999): "Structure-Activity Relationships of Bisphosphate Nucleotide Derivatives as P2Y1 Receptor Antagonists and Partial Agonist"

Hinton, D.M.; Baez, J.A.; Gumpert, R.I., *Biochemistry*, **17**, 5091 - 5097 (1978): "T4 RNA Ligase Joins 2'-Deoxyribonucleoside 3',5'-bisphosphates to Oligodeoxyribonucleotides"

Cuatrecasas, P.; Fuchs, S.; Anfinsen, C.B., *J. Biol. Chem.*, **242**, 3063 - 3067 (1967): "The Binding of Nucleotides and Calcium to the Extracellular Nuclease of *Staphylococcus aureus*"