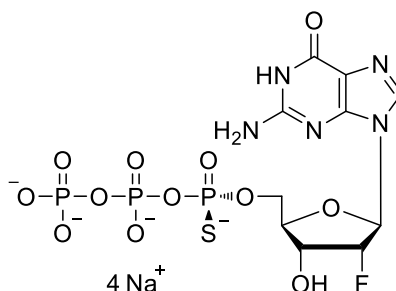


Technical Information about Rp-2'-F-dGTP- α -S

Update: February 23, 2023ss



Abbreviation: **Rp-2'-F-dGTP- α -S**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₀ H ₁₅ FN ₅ O ₁₂ P ₃ S (free acid)	[pending]	541.2 (free acid)	λ_{\max} 252 nm / ϵ 14300 / pH 7	D 231

Name: 2'- Deoxy- 2'- fluoroguanosine - 5'- O- (1- thiotriphosphate), Rp- isomer (Rp-2'-F-dGTP- α -S), sodium salt

Description: Rp-2'-F-dGTP- α -S is an analogue of GTP and Rp-GTP- α -S, respectively. The 2'-hydroxyl group of GTP is replaced by a fluorine atom and one of the non-bridging oxygens in the S position of the α -phosphate is replaced by sulfur. The suffix "p" indicates that R/S nomenclature refers to phosphorus. The corresponding Sp-isomer is offered as well (Cat. No. D 232).

Properties:

- Increased metabolic stability compared to the parent compounds 2'-F-dGTP and GTP/dGTP, respectively,
- Useful for modulation of dGTP-responsive receptors and determination of their stereospecificity,
- Probably not accepted by DNA polymerases for incorporation of phosphorothioate into DNA.

Specification: Aqueous solution of the sodium salt (10 mM). Other salt forms of Rp-2'-F-dGTP- α -S are available upon request. Micromolar quantities are determined by UV at λ_{\max} . When opening the tube please make sure that no liquid is lost within the cap. A short spin-down in a bench centrifuge is recommended before use.

Purity: Typical purity is better than 95% (HPLC / UV / 252 nm) at time of quality control and packing. However, actual purity depends on storage and transport conditions. The product is not sterile and has not been tested for endotoxins.

Stability and Storage: Rp-2'-F-dGTP- α -S is most stable when stored as aqueous solution in the freezer (-20° Celsius necessary, -70° recommended), however, at ambient temperature the compound slowly starts to decompose. Thus, in order to maintain its original high quality it is recommended to allow thawing only before using the product. If you will not use up the vial with one application, please aliquot the contents of the vial in order to avoid repeated freeze/thaw cycles for the rest. When making such aliquots be sure to operate quickly and to freeze the vial again as soon as possible.

Toxicity and Safety: Since nucleoside triphosphates has important tasks in every organism, it is very likely that triphosphate 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!

Reference for Rp-2'-F-dGTP- α -S: Rp-2'-F-dGTP- α -S is a new product and there are currently no corresponding references available.

Selected References for the Related Compound Rp-dGTP- α -S (Cat. No. D 030):

Abbotts, J.; SenGupta, D.N.; Zon, G.; Wilson, S.H., *J. Biol. Chem.*, **263**, 15094 - 15103 (1988): "Studies on the Mechanism of *Escherichia coli* DNA Polymerase I Large Fragment"

Kunkel, T.A.; Eckstein, F.; Mildvan, A.S.; Koplitz, R.M.; Loeb, L.A., *Proc. Natl. Acad. Sci. USA*, **78**, 6734 - 6738 (1981): "Deoxynucleoside [1-thio]triphosphates Prevent Proofreading During *in vitro* DNA Synthesis"

Selected References for the Related Compound 2'-F-dGTP:

Richardson, F.C.; Kuchta, R.D.; Mazurkiewicz, A.; Richardson, K.A., *Biochem. Pharmacol.*, **59**, 1045 - 1052 (2000): "Polymerization of 2'-Fluoro- and 2'-O-Methyl-dNTPs by Human DNA Polymerase Alpha, Polymerase Gamma, and Primase"

Zhu, B.; Hernandez, A.; Tan, M.; Wollenhaupt, J.; Tabor, S.; Richardson, C.C., *Nucleic Acids Res.*, **43**, e94 (2015): "Synthesis of 2'-Fluoro RNA by Syn5 RNA Polymerase"

Ono, T.; Scalf, M.; Smith, L.M.; *Nucleic Acids Res.*, **25**, 4581 - 4588 (1997): "2'-Fluoro Modified Nucleic Acids: Polymerase-Directed Synthesis, Properties and Stability to Analysis by Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry"