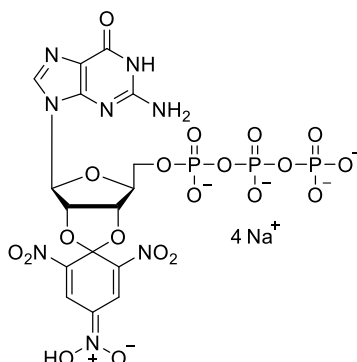


Technical Information about TNP-β-L-GTP

Update: October 11, 2022 ss



Abbreviation: TNP-β-L-GTP

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₆ H ₁₇ N ₉ O ₂₀ P ₃ (for free acid)	[pending]	734.3 (for free acid)	λ _{max} 408 nm / ε 26500 / pH 8	G 035

Name: Guanine- 2', 3'- O- (2, 4, 6- trinitrophenyl)- β- L- ribofuranosyl- 5'- O- triphosphate, sodium salt

Description: TNP-β-L-GTP is a fluorescent analogue of β-L-GTP, the mirror image version of naturally occurring β-D-GTP, where the guanine nucleobase is connected to β-L-ribose. The 2' and 3' hydroxy groups have been modified with a 2,4,6-trinitrophenyl moiety.

Properties: TNP fluorophore with λ_{exc} 408 nm and λ_{em} 552 nm. It is sensitive to indicators of local environment such as polarity and viscosity, and frequently exhibits a spectral shift and fluorescence enhancement upon binding to a protein. TNP-β-L-GTP is a potential inhibitor of various adenyllyl cyclase isoforms and soluble guanylyl cyclase (sGC).

Specification: Aqueous solution of the sodium salt (1 mM). Other salt forms of TNP-β-L-GTP 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: TNP-β-L-GTP 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. Exposure to light should be avoided. For stability reasons it is essential that the pH value of the product solution never drops below 7.5 which can be achieved by addition of a suitable buffer.

Toxicity and Safety: Since triphosphates have multiple 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!

Selected References for TNP-β-L-GTP: TNP-β-L-GTP is a new product and there are currently no corresponding references available.

Selected References for the Related Compound TNP-GTP (Cat. No. T 026):

Suryanarayana, S.; Göttle, M.; Hübner, M.; Gille, A.; Mou, T. C.; Sprang, S. R.; Richter, M.; Seifert, R., *J. Pharmacol. Exp. Ther.*, **330**, 687 - 695 (2009): "Differential Inhibition of Various Adenyllyl Cyclase Isoforms and Soluble Guanylyl Cyclase by 2',3'-O-(2,4,6-trinitrophenyl)-Substituted Nucleoside 5'-triphosphates"

Hiratsuka, T., *J. Biol. Chem.*, **260**, 4784 - 4790 (1985): "A Chromophoric and Fluorescent Analog of GTP, 2',3'-O-(2,4,6-trinitrocyclohexadienylidene)-GTP, as a Spectroscopic Probe for the GTP Inhibitory Site of Liver Glutamate Dehydrogenase"