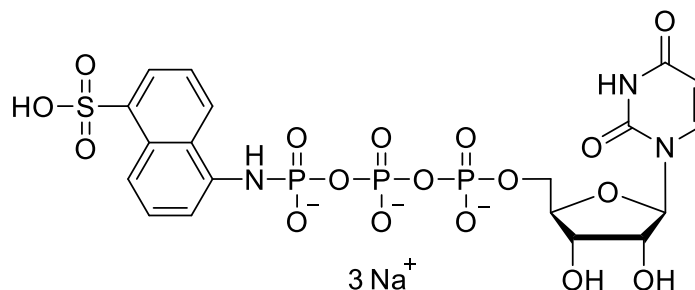


Technical Information about UTP- γ -AmNS

Fluorescent Analogue of UTP

Update: April 11, 2019 HU



Abbreviation: UTP- γ -AmNS

| Formula | CAS No. | Molecular Weight | UV | BIOLOG Cat. No. |
|--|--------------|--------------------------|---|-----------------|
| C ₁₉ H ₂₂ N ₃ O ₁₇ P ₃ S (for free acid) | [72218-69-0] | 689.4 (for free acid) | λ_{\max} 246 nm / ϵ 31000 / pH 7 | U 014 |

Name: Uridine- 5'- O- triphosphoro- γ - 1- (5- sulfonic acid)naphthylamidate

Description: UTP- γ -AmNS is an analogue of uridine-5'-O-triphosphate (UTP) in which aminonaphthalene-5-sulfonic acid (AmNS) has been attached to the terminal phosphate via a phosphoramidate bond.

Properties: UTP- γ -AmNS is a fluorescent analogue of UTP with λ_{exc} 320 nm and λ_{em} 460 nm. Cleavage of the α - β -phosphoryl bond produces a change in the spectroscopic properties such as a large increase in the fluorescence. UTP- γ -AmNS can be useful for assays of enzymes specialized to cleave α - β -phosphodiester bonds.

Specification: Aqueous solution of the sodium salt (10 mM). Other salt forms of UTP- γ -AmNS 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 / 246 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: UTP- γ -AmNS is most stable when stored as aqueous solution in the freezer (-20° Celsius necessary, -80° 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. The compound should be protected from light.

Toxicity and Safety: Since triphosphates have multiple tasks in every organism, it is very likely that UTP 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 UTP- γ -AmNS:

Bhat, J.; Rane, R.; Solapure, S.M.; Sarkar, D.; Sharma, U.; Harish, M.N.; Lamb, S.; Plant, D.; Alcock, P.; Peters, S.; Barde, S.; Roy, R.K., *J. Biomol. Screen.*, **11**, 968 - 976 (2006): "High-Throughput Screening of RNA Polymerase Inhibitors Using a Fluorescent UTP Analog"

Wu, F.Y.-H.; Tyagi, S.C., *J. Biol. Chem.*, **27**, 13147 - 13154 (1987): "Flouresence Resonance Energy Transfer Studies on the Proximity Relationship between the Intrinsic Metal Ion and Substrate Binding Sites of Escherichia coli RNA Polymerase"

Pollack, S.E.; Auld, D.S., *Anal. Biochem.*, **127**, 81 - 88 (1982): "Fluorescent Nucleotide Triphosphate Substrates for Snake Venom Phosphodiesterase"

Yarbrough, L.R.; Bock, J.L., *J. Biol. Chem.*, **255**, 9907 - 9911 (1980): "Stacking Interactions in Fluorescent Nucleotide Analogs Containing 1-Aminonaphthalene-5-Sulfonate at the Phosphoryl Terminus"

Yarbrough, L.R.; Schlageck, J.G.; Baughman, M., *J. Biol. Chem.*, **254**, 12069 - 12073 (1979): "Synthesis and Properties of Fluorescent Nucleotide Substrates for DNA-dependent RNA Polymerases"