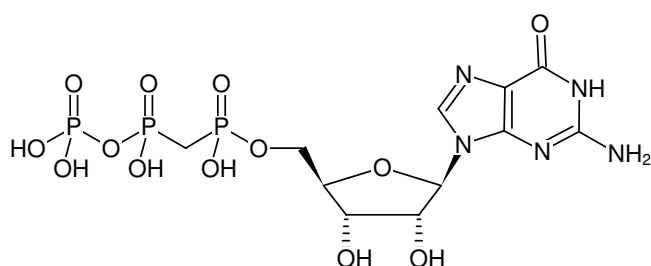


**GpCpP**

(GMPCPP)

Guanosine-5'-[(α,β)-methylene]triphosphate, Sodium salt

Cat. No.	Amount
NU-405S	100 μ l (10 mM)
NU-405L	5 x 100 μ l (10 mM)



Structural formula of GpCpP

For research use only!**Shipping:** shipped on blue ice**Storage Conditions:** store at -20 °C

Short term exposure (up to 1 week cumulative) to ambient temperature possible.

Shelf Life: 12 months after date of delivery**Molecular Formula:** C₁₁H₁₈N₅O₁₃P₃ (free acid)**Molecular Weight:** 521.21 g/mol (free acid)**Exact Mass:** 521.01 g/mol (free acid)**CAS#:** 14997-54-7**Purity:** \geq 95 % (HPLC)**Form:** solution in water**Color:** colorless to slightly yellow**Concentration:** 10 mM - 11 mM**pH:** 7.5 \pm 0.5**Spectroscopic Properties:** λ_{\max} 252 nm, ϵ 13.7 L mmol⁻¹ cm⁻¹ (Tris-HCl pH 7.5)**Applications:**Atomic force microscopy^[1]Cryomicroscopy^[2]Assembly of microtubule^[3]Dynamic of microtubule bundles^[4]**Specific Ligands:**Tubulin^[5]GTP cyclohydrolase^[6]**Selected References:**

- [1] Thomson *et al.* (2003) Large fluctuations in the disassembly rate of microtubules revealed by atomic force microscopy. *Ultramicroscopy* **97**:239.
- [2] Meurer-Grob *et al.* (2001) Microtubule structure at improved resolution. *Biochemistry-US* **40** (27):8000.
- [3] Dixit *et al.* (2009) Microtubule plus-end tracking by CLIP-170 requires EB1. *PNAS USA* **106**:492.
- [4] Laan *et al.* (2008) Force-generation and dynamic instability of microtubule bundles. *PNAS USA* **105**:8920.
- [5] Shanker *et al.* (2007) Enhanced microtubule binding and tubulin assembly properties of conformationally constrained Paclitaxel derivatives. *Biochemistry* **46**:11514.
- [6] Ren *et al.* (2005) GTP cyclohydrolase II structure and mechanism. *J. Biol. Chem.* **280**:36912.
- Franck *et al.* (2010) Direct physical study of kinetochore-microtubule interactions by reconstitution and interrogation with an optical force clamp. *Methods* **51** (2):242.
- Nitzsche *et al.* (2010) Studying kinesin motors by optical 3D-nanometry in gliding motility assays. *Methods Cell. Biol.* **95**:247.
- Gell *et al.* (2010) Microtubule dynamics reconstituted in vitro and imaged by single-molecule fluorescence microscopy. *Methods Cell. Biol.* **95**:221.
- Peters *et al.* (2010) Insight into the molecular mechanism of the multitasking kinesin-8 motor. *EMBO J.* **29** (20):3437.
- Khrapunovich-Baine *et al.* (2009) Distinct Pose of Discodermolide in Taxol Binding Pocket Drives a Complementary Mode of Microtubule Stabilization. *Biochemistry* **48** (49):11677.

Nitzsche, *et al.* (2009) Quantum-dot-assisted characterization of microtubule rotations during cargo transport. *Nature Nanotechnology* **3**:553.Asbury *et al.* (2007) Tension applied through the Dam1 complex promotes

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microtubule elongation providing a direct mechanism for length control in mitosis. *Nature Cell Biology* **9**:832.

Cary *et al.* (2005) Tonic and acute nitric oxide signaling through soluble guanylate cyclase is mediated by nonheme nitric oxide, ATP, and GTP. *Nature Structural & Molecular Biology* **102 (37)**:13064.

Klaholz *et al.* (2005) Conformational transition of initiation factor 2 from the GTP- to GDP- bound state visualized on the ribosome. *Nature Structural & Molecular Biology* **11**:1145.

Li *et al.* (2000) Equilibrium studies of a fluorescent paclitaxel derivative binding to microtubules. *Biochemistry-US* **39 (3)**:616.

Lowe *et al.* (2000) Helical tubes of ftsz from *Methanococcus jannaschii*. *Biol. Chem.* **381 (9-10)**:993.

Muller-Reichert *et al.* (1998) Structural changes at microtubule ends accompanying GTP hydrolysis: information from a slowly hydrolyzable analogue of GTP, guanylyl (α,β)methylenediphosphonate. *Proc. Natl. Acad. Sci. USA* **95 (7)**:3661.

Tran *et al.* (1997) A metastable intermediate state of microtubule dynamic instability that differs significantly between plus and minus ends. *J. Cell Biol.* **138 (1)**:105.

Tran *et al.* (1997) How tubulin subunits are lost from the shortening ends of microtubules. *J. Struct. Biol.* **118 (2)**:107.

Vulevic *et al.* (1997) Role of guanine nucleotides in the vinblastine-induced self-association of tubulin: effects of guanosine α,β -methylenetriphosphate and guanosine α,β -methylenediphosphate. *Biochemistry-US* **36 (42)**:12828.

Caplow *et al.* (1996) Evidence that a single monolayer tubulin-GTP cap is both necessary and sufficient to stabilize microtubules. *Mol. Biol. Cell* **7 (4)**:663.

Hyman *et al.* (1995) Structural-changes accompanying GTP hydrolysis in microtubules - information from a slowly hydrolyzable analog guanylyl- (α,β)-methylene-diphosphonate. *J. Cell Biol.* **128 (1-2)**:117.