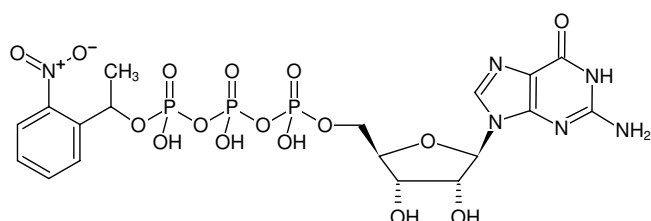




NPE-caged-GTP

Guanosine-5'-triphosphate, P³-(1-(2-nitrophenyl)-ethyl)-ester, Sodium salt

Cat. No.	Amount
NU-302S	100 µl (10 mM)
NU-302L	5 x 100 µl (10 mM)



Structural formula of NPE-caged-GTP

For research use only!

Shipping: shipped on gel packs

Storage Conditions: store at -20 °C

Additional Storage Conditions: store dark

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

Shelf Life: 12 months after date of delivery

Molecular Formula: C₁₈H₂₃N₆O₁₆P₃ (free acid)

Molecular Weight: 672.33 g/mol (free acid)

Exact Mass: 672.04 g/mol (free acid)

CAS#: 124830-99-5

Purity: ≥ 95 % (HPLC)

Form: solution in water

Color: colorless to slightly yellow

Concentration: 10 mM - 11 mM

pH: 7.5 ± 0.5

Spectroscopic Properties: λ_{max} 254 nm, ε 16.4 L mmol⁻¹ cm⁻¹ (Tris-HCl pH 7.5)

Applications:

Binding to GTPase activating protein^[1]

FTIR spectroscopy^[1, 2]

Mechanism of GTPase^[2]

Enzyme kinetic studies with Ras^[3]

Selected References:

[1] Allin *et al.* (2001) Monitoring the GAP catalyzed H-Ras GTPase reaction at atomic resolution in real time. *Proc. Natl. Acad. Sci. USA* **98** (14):7754.

[2] Allin *et al.* (2001) Ras catalyzes GTP hydrolysis by shifting negative charges from gamma- to beta-phosphate as revealed by time-resolved FTIR difference spectroscopy. *Biochemistry-US* **40** (10):3037.

[3] Du *et al.* (2001) Comparison of nitrophenylethyl and hydroxyphenacyl caging groups. *Biopolymers* **62**:147.

Jiménez *et al.* (2011) Reconstitution and Organization of Escherichia coli Proto-ring Elements (FtsZ and FtsA) inside Giant Unilamellar Vesicles Obtained from Bacterial Inner Membranes. *J. Biol. Chem.* **286** (13): 11236

Dumas *et al.* (2010) Spatial regulation of membrane fusion controlled by modification of phosphoinositides. *PLoS One.* **5** (8):e12208.

Scheidig *et al.* (1999) The pre-hydrolysis state of p21 (ras) in complex with GTP: new insights into the role of water molecules in the GTP hydrolysis reaction of ras-like proteins. *Struct. Fold Des.* **7** (11):1311.

Gerwert (1999) Molecular reaction mechanisms of proteins monitored by time-resolved FTIR-spectroscopy. *Biol. Chem.* **380** (7-8):931.

Cepus *et al.* (1998) Time-resolved FTIR studies of the GTPase reaction of H-ras p21 reveal a key role for the beta-phosphate. *Biochemistry* **37** (28):10263.

Wagner *et al.* (1995) Interaction of guanosine nucleotides and their analogs with elongation-factor tu from thermus-thermophilus. *Biochemistry* **34** (39):12535.

Scheidig *et al.* (1995) X-ray crystal-structure analysis of the catalytic domain of the oncogene product p21 (H-ras) complexed with caged GTP and mant-dGppNHp. *J. Mol. Biol.* **253** (1):132.

Scheidig *et al.* (1994) Crystallographic studies on p21 (h-ras) using the synchrotron laue method - improvement of crystal quality and monitoring of the gtpase reaction at different time points. *Acta Cryst. D* **50**:512.

Scheidig *et al.* (1992) Time-resolved crystallography on h-ras p21. *Philos. T. Roy. Soc. A* **340** (1657):263.

Reshetnikova *et al.* (1992) Crystals of intact elongation factor-Tu from thermus-thermophilus diffracting to 1.45-angstrom resolution. *J. Cryst. Growth* **122** (1-4):360.

Limmer *et al.* (1992) Nucleotide binding and gtp hydrolysis by

**NPE-caged-GTP**Guanosine-5'-triphosphate, P³-(1-(2-nitrophenyl)-ethyl)-ester, Sodium salt

elongation-factor Tu from thermus-thermophilus as monitored by proton NMR. *Biochemistry* **31** (11):2970.

Marx *et al.* (1990) Microtubule assembly and oscillations induced by flash-photolysis of caged-GTP. *Eur. Biophys. J.* **19** (1):1.

Schlichting *et al.* (1989) Biochemical and crystallographic characterization of a complex of c-ha-Ras p21 and caged GTP with flashphotolysis - (time-resolved structure). *Proc. Natl. Acad. Sci. USA* **86** (20):7687.