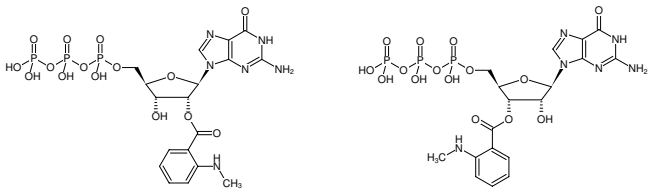
DATA SHEET

Jena Bioscience

Mant-GTP

2'/3'-O-(N-Methyl-anthraniloyl)-guanosine-5'-triphosphate, Triethylammonium salt

Cat. No.	Amount
NU-206S	150 µl (10 mM)
NU-206L	5 x 150 µl (10 mM)



Structural formula of Mant-GTP

For research use only!

Shipping: shipped on gel packs

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: $C_{18}H_{23}N_6O_{15}P_3$ (free acid)

Molecular Weight: 656.33 g/mol (free acid)

Exact Mass: 656.04 g/mol (free acid)

CAS#: 148821-03-8

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} 252/355 nm, ε 22.6/5.7 L mmol^{-1} cm^{-1} (Tris-HCl pH 7.5), λ_{exc} 355 nm, λ_{em} 448 nm

Applications:
Inhibition of AC-isoform[1] and GTPs[2]

Activity measurement: GC[3]

Specifity measurements with isoforms of ACs[4]

FRET: AC[5], edema factor[6]

Inhibition of edema factor (anthrax)[6]

Selected References:

[1] Gille *et al.* (2003) Mant-substituted guanine nucleotides: A novel class of potent adenylyl cyclase inhibitors. *Life Sciences* **74**:271.

[2] Gille *et al.* (2004) Differential inhibition of adenylyl cyclase isoforms and soluble guanylyl cyclase by purine and pyrimidine nucleotides. *J. Biol. Chem.* **279**:19955.

[3] Newton *et al.* (2010) A real-time fluorescent assay of the purified nitric oxide receptor, guanylyl cyclase. *Analytical Biochem.* **402**:129.

[4] Mou *et al.* (2006) Broad specifity of mammalian adenylyl cyclase for interaction with 2,3-substituted purine- and pyrimidine-nucleotide inhibitors. *Molecular Pharmacology* **70**:878.

[5] Goettle *et al.* (2007) Molecular analysis of the interaction of Bordetella pertussis adenylyl cyclase with fluorescent nucleotides. *Molecular Pharmacology* **72 (3)**:526.

[6] Suryanarayana *et al.* (2009) Distinct interactions of 2- and 3-O-(N-methyl)anthraniloyl-isomers of ATP and GTP with the adenylyl cyclase toxin from Bacillus anthraxis, edema factor. *Biochem. Pharmacol.* **78**:224.

Seifert *et al.* (2012) Inhibitors of membranous adenylyl cyclases. *Trends Pharmacol Sci.* **33 (2)**:64.

Erdorf *et al.* (2011) Pharmacological characterization of adenylyl cyclase isoforms in rabbit kidney membranes. *Naunyn Schmiedebergs Arch. Pharmacol.* **383 (4)**:357.

Labesse *et al.* (2011) Structural and functional characterization of the Mycobacterium tuberculosis uridine monophosphate kinase: insights into the allosteric regulation. *Nucleic Acids Res.* **39 (8)**:3458.

Pinto *et al.* (2011) Structure-activity relationships for the interactions of 2'- and 3'- (O)- (N-methyl)anthraniloyl-substituted purine and pyrimidine nucleotides with mammalian adenylyl cyclases. *Biochem. Pharmacol.* **82 (4)**:358.

Spangler *et al.* (2011) Interaction of the diguanylate cyclase YdeH of Escherichia coli with 2', (3')-substituted purine and pyrimidine nucleotides. *J. Pharmacol. Exp. Ther.* **336 (1)**:234.

Wang *et al.* (2011) Charge isomers of myelin basic protein: structure and interactions with membranes, nucleotide analogues, and calmodulin. *PLoS One.* **6 (5)**:e19915.

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Goettle *et al.* (2010) Cytidylyl and uridylyl cyclase activity of bacillus anthracis edema factor and Bordetella pertussis CyaA. *Biochemistry.* **49 (26)**:5494.

Taha *et al.* (2009) Molecular Analysis of the Interaction of Anthrax Adenylyl Cyclase Toxin, Edema Factor, with 2' (3')-O- (N-(methyl)anthraniloyl)-Substituted Purine and Pyrimidine Nucleotides. *Molecular Pharmacology.* **75 (3)**:693.

Wang *et al.* (2009) Regulation of Immature Dendritic Cell Migration by RhoA Guanine Nucleotide Exchange Factor Arhgef5. *J. Mol. Chem.* **284 (42)**:28599.

Dahl *et al.* (2008) The Importance of P-loop and Domain Movements in EF-Tu for Guanine Nucleotide Exchange. *J. Biol. Chem.* **281 (30)**:21139.

Kambach *et al.* (2007) Human OLA1 Defines an ATPase subfamily in the Obg Family of GTP-binding proteins. *J. Biol. Chem.* **282 (27)**:19928.

Pestova *et al.* (2006) Kinetic Analysis of Interaction of Eukaryotic Release Factor 3 with Guanine Nucleotides. *J. Biol. Chem.* **281 (52)**:40224.

Sprang *et al.* (2006) Broad and Specifity of Mammalian Adenylyl Cyclase for Interaction with 2',3'-Substituted Purine- and Pyrimidine Nucleotide Inhibitors. *Mol. Pharmacol.* **70**:878.

Wintermeyer *et al.* (2006) Role and timing of GTP binding and hydrolysis during EF-G-dependent RNA translocation on the ribosome. *PNAS* **103 (37)**:13670.

Alexandrov *et al.* (2001) Fluorescence methods for monitoring interactions of Rab proteins with nucleotides, Rab escort protein, and geranylgeranyltransferase. *Methods Enzymol.* **329**:14.

Simon *et al.* (1996) Kinetics of interaction of Rab5 and Rab7 with nucleotides and magnesium ions. *J. Biol. Chem.* **271**:20470.

Remmers *et al.* (1994) Fluorescent guanine nucleotide analogs and G protein activation. *J. Biol. Chem.* **269**:13771.

Brownbridge *et al.* (1993) Interaction of GTPase activating proteins (GAPs) with p21ras measured by a novel fluorescence anisotropy method. Essential role of Arg-903 of GAP in activation of GTP hydrolysis on p21ras. *J. Biol. Chem.* **268**:10914.

Hazlett *et al.* (1993) Solution dynamics of p21ras proteins bound with fluorescent nucleotides: a time-resolved fluorescence study. *Biochemistry* **32**:13575.

Eccleston *et al.* (1991) Fluorescence approaches to the study of the p21ras GTPase mechanism. *Biochem. Soc. Trans.* **19**:432.