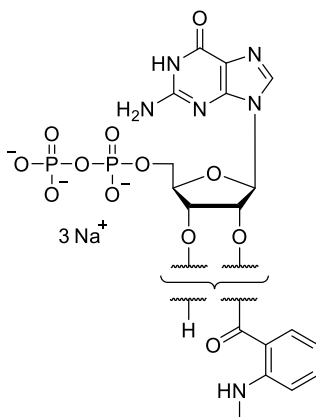


Technical Information about 2'- / 3'- O- (N'- Methylanthraniloyl)- GDP (MANT-GDP)

Update: October 18, 2018 HJ



Abbreviation:

MANT-GDP

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₈ H ₂₂ N ₆ O ₁₂ P ₂ (free acid)	[148821-02-7]	576.4 (free acid)	λ _{max} 252 nm / ε 22600 / pH 8	M 041

Name: 2'-/3'- O- (N'- Methylanthraniloyl)guanosine- 5'- O- diphosphate (MANT-GDP)

Description: MANT-GDP is an analogue of the natural structure GDP where either the ribose 2'- hydroxy or the 3'- hydroxy group has been esterified by the fluorescent methylisatoic acid.

Properties: MANT-GDP is a fluorescent analogue of GDP with λ_{exc} 350 nm and λ_{em} 448 nm.

Specification: Aqueous solution of the sodium salt (10 mM). Other salt forms of MANT-GDP are available upon request. Micro molar quantities are determined by UV at λ_{max}. When opening the tube please make sure that no substance is lost within the cap. A short spin-down in a bench centrifuge is recommended before use.

Purity: Typical analysis is better than 95% (HPLC / UV / 252 nm) for mixture of 2'- and 3'- isomers 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: MANT-GDP is relatively stable when stored frozen in aqueous solution (- 20° Celsius necessary, - 80° recommended). 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 bright light should be avoided.

Toxicity and Safety: Since nucleoside diphosphates have multiple tasks in every organism, it is very likely that GDP 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 MANT-GDP:

Chepurny, O.G.; Bertinetti, D.; Diskar, M.; Leech, C.A.; Afshari, P.; Tsalkova, T.; Cheng, X.; Schwede, F.; Genieser, H.-G.;

Herberg, F.W.; Holz, G.G., *Mol. Endocrinol.*, **27**, 1267-1282 (2013): "Stimulation of Proglucagon Gene Expression by Human GPR119 Enteroendocrine L-Cell Line GLUTag"

Rehmann, H., *Sci. Rep.*, 3:3032 (2013): "Epac-Inhibitors: Facts and Artefacts"

Geduhn, J.; Dove, S.; Shen, Y.; Tang, W.-J.; König, B.; Seifert, R., *J. Pharmacol. Exp. Ther.*, **336**, 104 - 115 (2011): "Bis-Halogen-Anthraniloyl-Substituted Nucleoside 5'-Triphosphate as Potent and Selective Inhibitors of Bordetella Pertussis Adenylyl Cyclase Toxin"

Tsalkova, T.; Gribenko, A.V.; Cheng, X., *Assay Drug Dev. Technol.*, **9**, 88 - 91 (2010): "Exchange Protein Directly Activated by Cyclic AMP Isoform 2 is not a Direct Target of Sulfonylurea Drugs"

Wang, J.L.; Guo, J.-X.; Zhang, Q.-Y.; Wu, J.J.-Q.; Seifert, R.; Lushington, G.H., *Bioorg. Med. Chem.*, **15**, 2993 - 3002 (2007): "A Conformational Transition in the Adenylyl Cyclase Catalytic Site Yields Different Binding Modes for Ribosyl-Modified and Unmodified Nucleotide Inhibitors"

Rehmann, H.; Rueppel, A.; Bos, J.L.; Wittinghofer, A., *J. Biol. Chem.*, **278**, 23508 - 23514 (2003): "Communication Between the Regulatory and the Catalytic Region of the cAMP-responsive Guanine Nucleotide Exchange Factor Epac"

Wieden, H.J.; Gromadski, K.; Rodnin, D.; Rodnina, M.V., *J. Biol. Chem.*, **277**, 6032-6 (2002): "Mechanism of Elongation Factor (EF)-Ts-catalyzed Nucleotide Exchange in EF-Tu. Contribution of Contacts at the Guanine Base"

Mohr, D.; Wintermeyer, W.; Rodnina, M.V., *Biochemistry*, **41**, 12520 - 8 (2002): "GTPase Activation of Elongation Factors Tu and G on the Ribosome"

Ahmadian, M.R.; Wittinghofer, A.; Herrmann, C., *Methods Mol. Biol.*, **189**, 45 - 63 (2002): "Fluorescence Methods in the Study of small GTP-Binding Proteins"

Lin, B.; Skidmore, J.M.; Bhatt, A.; Pfeffer, S.M.; Pawloski, L.; Maddock, J.R., *Mol. Microbiol.* **39**, 924 - 934 (2001): "Alanine Scan Mutagenesis of the Switch I Domain of the Caulobacter Crescentus CgtA Protein Reveals Critical Amino Acids Required for in vivo Function"

Zhu, Z.; Delprato, A.; Merithew, E.; Lambright, D.G., *Biochemistry*, **40**, 15699 - 15706 (2001): "Determinants of the Broad Recognition of Exocytic Rab GTPases by Mss4"

Thoma, N.H.; Iakovenko, A.; Kalinin, A.; Waldmann, H.; Goody, R.S.; Alexandrov, K., *Biochemistry*, **40**, 268 - 274 (2001): "Allosteric Regulation of Substrate Binding and Product Release in Geranylgeranyltransferase Type II"

Jagath, J.R.; Rodnina, M.V.; Lentzen, G.; Wintermeyer, W., *Biochemistry*, **37**, 15408 - 15413 (1998): "Interaction of Guanine Nucleotides with the Signal Recognition Particle from *Escherichia coli*"

Simon, I.; Zerial, M.; Goody, R.S., *J. Biol. Chem.*, **271**, 20470 - 20478 (1996): "Kinetics of Interaction of Rab5 and Rab7 with Nucleotides and Magnesium Ions"

Brownbridge, G.G.; Lowe, P.N.; Moore, K.J.M.; Skinner, R.H.; Webb, M.R., *J. Biol. Chem.*, **268**, 10914 - 10919 (1993): "Interaction of GTPase Activating Proteins (GAPs) with p21^{ras} Measured by a Novel Fluorescence Anisotropy Method"

Neal, S.E.; Eccleston, J.F.; Webb, M.R., *Proc. Natl. Acad. Sci.*, **87**, 3562 - 3565 (1990): "Hydrolysis of GTP by p21^{NRAS}, the NRAS Protooncogene Product, is Accompanied by a Conformational Change in the Wild-Type Protein: Use of a Single Fluorescent Probe of the Catalytic Site"

John, J.; Sohmen, R.; Feuerstein, J.; Linke, R.; Wittinghofer, A.; Goody, R.S., *Biochem.*, **29**, 6058 - 6065 (1990): "Kinetics of Interaction of Nucleotides with Nucleotide-Free H-ras p21"

Hiratsuka, T., *Biochim Biophys Acta*, **742**, 496 - 508 (1983): "New Ribose-modified Fluorescent Analogs of Adenine and Guanine Nucleotides Available as Substrates for Various Enzymes"