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Technical Information about MANT-cUMP

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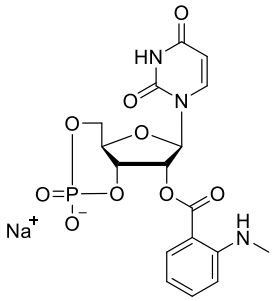

Abbreviation: **MANT-cUMP**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{17}H_{17}N_3O_9P{\cdot}Na$	[1477518-35-6]	461.3	λ_{max} 358 nm / ε 5700 / pH 7	M 068

Name: 2'- O- (N'- Methylanthraniloyl)uridine- 3', 5'- cyclic monophosphate, sodium salt

Description: MANT-cUMP is an analogue of cyclic UMP (cUMP, Biolog Cat. No. U 001) in which the ribose 2'-hydroxy group is esterified by the fluorescent methylisatoic acid.

Properties: MANT-cUMP is a membrane-permeant, fluorescent analogue of cUMP with λ_{exc} 350 nm and λ_{em} 441 nm, which can be useful in phosphodiesterase studies. The compound shows an increase in fluorescence when cleaved by PDE. For optimized detection of the change in fluorescence after cleavage, it is recommended to use an excitation wavelength of 290 nm and to supplement the test samples with DMSO (Reinecke et al. 2013).

Specification: Lyophilized or crystallized sodium salt. The free acid or other salt forms are available upon request. Equal concentrations of MANT-cUMP can appear very different in volume due to sensitivity of the lyophilized form to humidity. The compound can even contract to small volume droplets. Normally the product is located in the conical bottom of the tube. Micromolar quantities are determined by UV at λ_{max}.

Purity: Typical analysis is better than 98% (HPLC / UV / 262 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: MANT-cUMP is soluble in water (≥ 13 mM). Please rinse tube walls carefully and preferably use ultrasonic or vortex to achieve total and uniform mixing. When opening the tube please make sure that no substance is lost within the cap.

Stability and Storage: If MANT-cUMP is protected from light, it is sufficiently stable at room temperature and does not need special care during handling or shipment. Nevertheless, we recommend that the compound should be stored in the freezer, for longer storage periods preferably in freeze-dried form.

Toxicity and Safety: Since cUMP could have multiple tasks in every organism, it is not unlikely that its analogues could 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 Reference for MANT-cUMP:

Reinecke, D.; Schwede, F.; Genieser, H.-G.; Seifert, R., *PLoS One*, **8** (1):e54158 (2013): "Analysis of Substrate Specificity and Kinetics of Cyclic Nucleotide Phosphodiesterases with N'-Methylanthraniloyl-substituted Purine and Pyrimidine 3',5'-cyclic Nucleotides by Fluorescence Spectrometry"

Selected Reference for Related Cyclic Nucleotides:

Hiratsuka, T., *J. Biol. Chem.*, **257**, 13354 - 13358 (1982): "New Fluorescent Analogs of cAMP and cGMP Available as Substrates for Cyclic Nucleotide Phosphodiesterase"

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