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Technical Information about 5,6-DM-cBIMP

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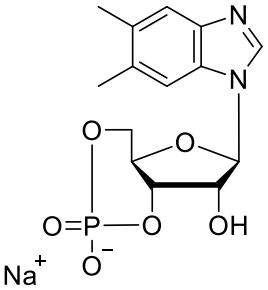

Abbreviation: **5,6-DM-cBIMP**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{14}H_{16}N_2O_6P{\cdot}Na$	[142754-31-2]	362.3	λ_{max} 279 nm / ε 7500 (MeOH)	D 001

Name: 5, 6- Dimethyl- 1- β- D- ribofuranosylbenzimidazole- 3', 5'- cyclic monophosphate

Description: 5,6-DM-cBIMP is an analogue of the parent second messenger cyclic GMP in which the guanine moiety is replaced by a highly lipophilic modified benzimidazole ring system.

Properties: 5,6-DM-cBIMP is a rationally designed membrane-permeant activator of phosphodiesterase type II with only very poor activation potential for protein kinase G.

Specification: Lyophilized or crystallized sodium salt. The free acid or other salt forms of 5,6-DM-cBIMP are available upon request. Please keep in mind that equal concentrations of the compound may look 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 / 279 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: Due to its high lipophilicity the solubility of 5,6-DM-cBIMP in water or buffer is limited. However, a 1 mM (10^{-3} M) stock solution can be obtained without difficulties. The compound has also good solubility in DMSO and ethanol. 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: 5,6-DM-cBIMP has sufficient stability 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 cyclic GMP has multiple tasks in every organism it is very likely that cGMP 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 5,6-DM-cBIMP:

Jäger, R.; Schwede, F.; Genieser, H.-G.; Koesling, D.; Russwurm, M., *Br. J. Pharmacol.*, **161**, 1645 - 1660 (2010): "Activation of PDE2 and PDE5 cy Specific GAF Ligands: Delayed Activation of PDE5"

Jin, X.-H.; Siragy, H.M.; Carey, R.M., *Hypertension*, **38**, 309 - 316 (2001): "Renal Interstitial cGMP Mediates Natriuresis by Direct Tubule Mechanism"

Genieser, H.-G.; Winkler, E.; Butt, E.; Zorn, M.; Schulz, S.; Iwitzki, F.; Störmann, R.; Jastorff, B.; Doeskeland, S.O.; Oegreid, D.; Ruchaud, S.; Lanotte, M., *Carbohydr. Res.*, **234**, 217 - 235 (1992): "Derivates of 1-ß-D-Ribofuranosylbenzimidazole 3', 5'-phosphate that Mimic the Actions of Adenosine 3', 5',- phosphate (cAMP) and Guanosine 3', 5'- phosphate (cGMP)"

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