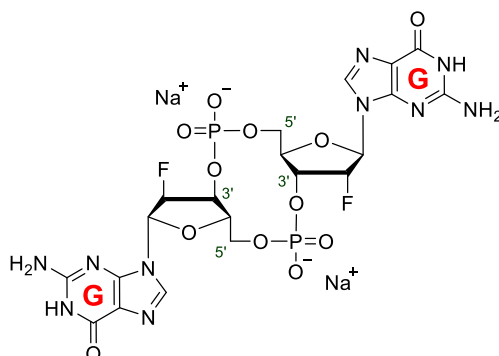


## Technical Information about 2',2''-Di-F-c-didGMP

Analogue of the bacterial second messenger c-diGMP

Update: June 19, 2019 HGG



**Abbreviation:** 2',2''-Di-F-c-didGMP

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C <sub>20</sub> H <sub>22</sub> F <sub>2</sub> N <sub>10</sub> O <sub>12</sub> P <sub>2</sub> (free acid)	[1334145-18-4]	694.4 (free acid)	λ <sub>max</sub> 253 nm / ε 23400 / pH 7	D 210

**Name:** 2'-, 2''- Dideoxy- 2'-, 2''- difluoro- cyclic diguanosine monophosphate

**Description:** 2',2''-Di-F-c-didGMP is an analogue of the bacterial second messenger c-diGMP (Cat. No. C 057) in which the ribose 2'-hydroxy groups have been replaced by fluorine atoms.

**Properties:** 2',2''-Di-F-c-didGMP may be useful in studies on ligand-receptor interactions with c-diGMP and c-diAMP-binding proteins. It induces higher levels of IFN type I compared to natural c-diGMP.

**Specification:** Crystallized or lyophilized sodium salt. 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 droplets. Normally the product is located in the conical bottom of the tube. Micromolar quantities are determined by UV at λ<sub>max</sub>.

**Purity:** Typical analysis is better than 95% (HPLC / UV / 253 nm). The product is not sterile and has not been tested for endotoxins.

**Solubility:** 2',2''-Di-F-c-didGMP is soluble in water (≥ 1.7 mM, limits have not been determined). 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:** 2',2''-Di-F-c-didGMP 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:** 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 2',2''-Di-F-c-didGMP:

Launer-Felty, K.D.; Strobel, S.A., *Nucleic Acids Res.*, **46**, 2765 - 2776 (2018): "Enzymatic synthesis of cyclic dinucleotide analogs by a promiscuous cyclic-AMP-GMP synthetase and analysis of cyclic dinucleotide responsive riboswitches"

Shanahan, C.A.; Gaffney, B.L.; Jones, R.A.; Strobel, S.A., *Biochemistry*, **52**, 365 - 377 (2013): "Identification of c-di-GMP derivatives resistant to an EAL domain phosphodiesterase"

Shanahan, C.A.; Gaffney, B.L.; Jones, R.A.; Strobel, S.A., *J. Am. Chem. Soc.*, **133**, 15578 - 15592 (2011): "Differential Analog Binding by two Classes of c-di-GMP Riboswitches"

Zhou, J.; Watt, S.; Wang, J.X.; Nakayama, S.; Sayre, D.A.; Yiu-fai Lam, Y.; Lee, V.T.; Sintim, H.O., *Bioorg. Med. Chem.*, **21**, 4396 - 4404 (2013): "Potent suppression of c-di-GMP synthesis via I-site allosteric inhibition of diguanylate cyclases with 2'-F-c-di-GMP"

Burdette, D.L.; Monroe, K.M.; Sotelo-Troha, K.; Iwig, J.S.; Eckert, B.; Hyodo, M.; Hayakawa, Y.; Vance, R.E., *Nature*, **478**, 515 - 518 (2011): "STING is a direct innate immune sensor of cyclic di-GMP"