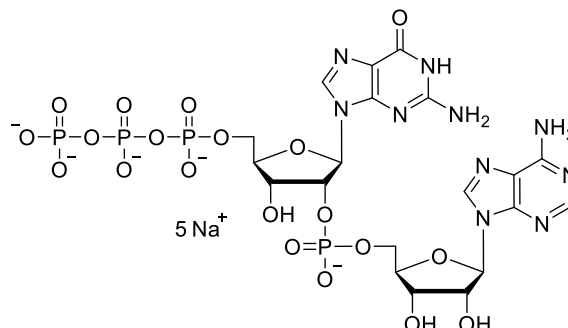


Technical Information about pppG(2',5')pA

Update: June 29, 2018 AI



Abbreviation: pppG(2',5')pA

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₂₀ H ₂₈ N ₁₀ O ₂₀ P ₄ (for free acid)	[1445905-50-9]	852.4 (for free acid)	λ _{max} 256 nm / ε 25050 / pH 7	T 051

Name: 5'- Triphosphoguananylyl- (2' → 5')- adenosine, sodium salt / syn.: AMP-2'-GTP

Description: In pppG(2',5')pA a 5'-GTP unit is connected with a 5'-AMP unit via a 2' → 5' linkage to form a linear dinucleotide.

Properties: pppG(2',5')pA is considered to be the linear catalytic intermediate in the enzymatic production of 2',3'-cGAMP (*aka* c[G(2',5')pA(3',5')p], BIOLOG Cat. No. C 161) by the mammalian innate immune DNA sensor cGAMP synthase (cGAS). According to Hall et al. (2017) human stimulator of interferon genes STING₁₅₅₋₃₄₁ does not bind pppG(2',5')pA at concentrations of up to 50 μM.

Specification: Aqueous solution of the sodium salt (10 mM). Other salt forms of pppG(2',5')pA may be available upon request. Micromolar quantities are determined by UV at λ_{max}. When opening the tube please make sure that no liquid is lost within the cap. A short spin-down in a bench centrifuge is recommended before use.

Purity: Typical purity is better than 95% (HPLC / UV / 256 nm) 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: pppG(2',5')pA is most stable when stored as aqueous solution in the freezer (- 20° Celsius necessary, - 70° recommended), however, at ambient temperature the compound slowly starts to decompose. Thus, 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.

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 pppG(2',5')pA:

Hall, J.; Ralph, E.C.; Shanker, S.; Wang, H.; Byrnes, L.J.; Horst, R.; Wong, J.; Brault, A.; Dumlao, D.; Smith, J.F.; Dakin, L.A.; Schmitt, D.C.; Trujillo, J.; Vincent, F.; Griffor, M.; Aulabaugh A.E., *Protein Sci.*, **26**, 2367 - 2380 (2017): "The Catalytic Mechanism of Cyclic GMP-AMP Synthase (cGAS) and Implications for Innate Immunity and Inhibition"

Kranzusch, P.J.; Lee, A.S.Y.; Wilson, S.C.; Solovykh, M.S.; Vance, R.E.; Berger, J.M.; Doudna, J.A., *Cell*, **158**, 1011 - 1021 (2014): "Structure-guided Reprogramming of Human cGAS Dinucleotide Linkage Specificity"

Gao, P.; Ascano, M.; Wu, Y.; Barchet, W.; Gaffney, B.L.; Zillinger, T.; Serganov, A.A.; Liu, Y.; Jones, R.A., *Cell*, **153**, 1094 - 1107 (2013): "Cyclic [G(2',5')pA(3',5')p] is the Metazoan Second Messenger Produced by DNA-activated Cyclic GMP-AMP Synthase"