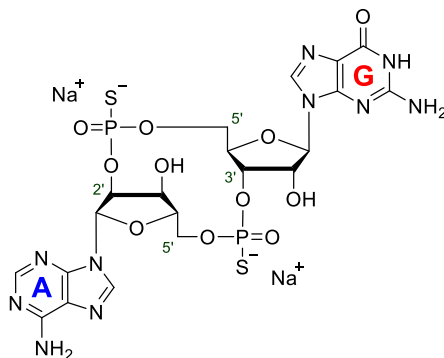


Technical Information about c[A(2',5')pS-G(3',5')pS], isomer 2

Update: November 12, 2021 AI



Abbreviation: c[A(2',5')pS-G(3',5')pS], isomer 2

| Formula | CAS No. | Molecular Weight | UV | BIOLOG Cat. No. |
|--|-----------|----------------------|--|-----------------|
| C ₂₀ H ₂₄ N ₁₀ O ₁₁ P ₂ S ₂ (free acid) | [pending] | 706.6 (free acid) | λ _{max} 256 nm / ε 25400 / pH 7 | C 247 |

Name: Cyclic (adenosine- (2' → 5')- monophosphorothioate- guanosine- (3' → 5')- monophosphorothioate), isomer 2 (c[A(2',5')pS-G(3',5')pS] / 3'2'-cGAMPSS / 3',5'-2',5'-cGAMPSS), sodium salt

Description: c[A(2',5')pS-G(3',5')pS], isomer 2 is a non-canonical cyclic dinucleotide in which a 5'-AMP unit is connected with a 5'-GMP unit via a 2'-5' and a 3'-5' phosphodiester bond to form a cyclic structure. In addition, one of the non-bridging oxygens in each phosphate moiety is replaced by sulfur.

Properties: c[A(2',5')pS-G(3',5')pS], isomer 2 (syn. 3'2'-cGAMPSS, isomer 2) is an isomeric di-thiophosphate derivative of the recently discovered nucleotide second messenger c[A(2',5')pG(3',5')p] (3'2'-cGAMP, Cat. No. C 238). The di-thiophosphate modifications are expected to render the compound resistant to degradation by 3'2'-cGAMP hydrolysing enzymes. c[A(2',5')pS-G(3',5')pS], isomer 1 is available as well (syn. 3'2'-cGAMPSS, isomer 1, Cat. No. C 246).

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 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 95% (HPLC / UV / 256 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: c[A(2',5')pS-G(3',5')pS], isomer 2 is soluble in water (≥ 1 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: c[A(2',5')pS-G(3',5')pS], isomer 2 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 contact with eyes and skin 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 c[A(2',5')pS-G(3',5')pS], isomer 2: c[A(2',5')pS-G(3',5')pS], isomer 2 is a new product and there are currently no references available.

Selected References for the Parent Compound c[A(2',5')pG(3',5')p] (3'2'-cGAMP):

Slavik, K.M.; Morehouse, B.R.; Ragucci, A.E.; Zhou, W.; Ai, X.; Chen, Y.; Li, L.; Wei, Z.; Bähre, H.; König M.; Seifert, R.; Lee, A.S.Y.; Cai, H.; Imler, J.L.; Kranzusch, P.J., *Nature*, **597**, 109 - 113 (2021): "cGAS-Like Receptors Sense RNA and Control 3'2'-cGAMP Signalling in *Drosophila*"

Holleufer, A.; Winther, K.G.; Gad, H.H.; Ai, X.; Chen, Y.; Li, L.; Wei, Z.; Deng, H.; Liu, J.; Frederiksen, N.A.; Simonsen, B.; Andersen, L.L.; Kleigrewe, K.; Dalskov, L.; Pichlmair, A.; Cai, H.; Imler, J.L.; Hartmann, R., *Nature*, **597**, 114 - 118 (2021): "Two cGAS-Like Receptors Induce Antiviral Immunity in *Drosophila*"

Fatma, S.; Chakravarti, A.; Zeng, X.; Huang, R.H., *Nat. Commun.*, **12**(1):6381 (2021): "Molecular Mechanisms of the CdnG-Cap5 Antiphage Defense System Employing 3',2'-cGAMP as the Second Messenger"