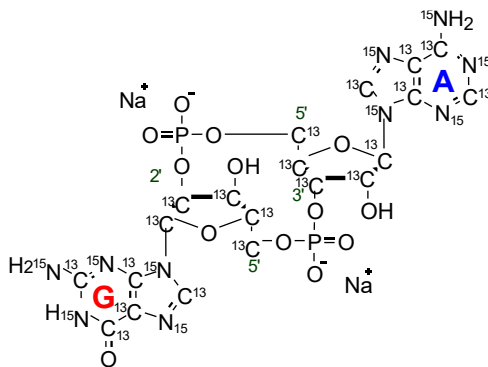


Technical Information about [¹³C₂₀,¹⁵N₁₀]-c[G(2',5')pA(3',5')p]

Stable isotope version of the metazoan cyclic dinucleotide second messenger c[G(2',5')pA(3',5')p]

Update: February 12, 2024 ss



Abbreviation: [¹³C₂₀,¹⁵N₁₀]-c[G(2',5')pA(3',5')p]

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
¹³ C ₂₀ H ₂₄ ¹⁵ N ₁₀ O ₁₃ P ₂ (free acid)	[pending]	704.4 (free acid)	λ _{max} 256 nm / ε 25050 / pH 7	C 410

Name: Cyclic (guanosine- [¹³C₁₀,¹⁵N₅]- (2' → 5')- monophosphate- adenosine- [¹³C₁₀,¹⁵N₅]- (3' → 5')- monophosphate), sodium salt
Syn.: [¹³C₂₀,¹⁵N₁₀]-cGAMP(2'-5') / [¹³C₂₀,¹⁵N₁₀]-2'-3'-cGAMP / [¹³C₂₀,¹⁵N₁₀]-2',5'-3',5'-cGAMP

Description: In [¹³C₂₀,¹⁵N₁₀]-c[G(2',5')pA(3',5')p] a 5'-GMP unit is connected with a 5'-AMP unit via a 2'- 5' and a 3'-5' phosphodiester bond to form a cyclic structure. In contrast to the naturally occurring c[G(2',5')pA(3',5')p] all carbon atoms are exchanged against the corresponding stable isotope ¹³C. Also, all nitrogen positions are occupied by stable ¹⁵N isotopes.

Properties: [¹³C₂₀,¹⁵N₁₀]-c[G(2',5')pA(3',5')p] is the stable isotope version of the metazoan cyclic dinucleotide second messenger c[G(2',5')pA(3',5')p] / 2'-3'-cGAMP (Biolog Cat. No. C 161). c[G(2',5')pA(3',5')p] is produced by the mammalian innate immune DNA sensor cGAMP synthase (cGAS) and potentially activates the immune signalling protein STING (stimulator of interferon genes).
[¹³C₂₀,¹⁵N₁₀]-c[G(2',5')pA(3',5')p] is suitable as internal standard in LC-MS applications for c[G(2',5')pA(3',5')p].

Specification: Crystallized or lyophilized sodium salt. Please keep in mind that equal amounts of the compound may look different in volume. 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), with isotope purity ≥ 98%. The product is not sterile and has not been tested for endotoxins.

Solubility: [¹³C₂₀,¹⁵N₁₀]-c[G(2',5')pA(3',5')p] is soluble in water and aqueous buffers (≥ 50 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: [¹³C₂₀,¹⁵N₁₀]-c[G(2',5')pA(3',5')p] 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 Isotope Labelled c[G(2',5')pA(3',5')p]:

Carozza, J. A.; Böhnert, V.; Nguyen, K. C.; Skariah, G.; Shaw, K. E.; Brown, J. A.; Rafat, M.; von Eyben, R.; Graves, E. E.; Glenn, J. S.; Smith, M.; Li, L., *Nat. Cancer*, **1**, 184 - 196 (2020): "Extracellular cGAMP Is a Cancer Cell-Produced Immunotransmitter Involved in Radiation-Induced Anti-Cancer Immunity"

Collins, A. C.; Cai, H.; Li, T.; Franco, L. H.; Li, X. D.; Nair, V. R.; Scharn, C. R.; Stamm, C. E.; Levine, B.; Chen, Z. J.; Shiloh, M. U., *Cell Host Microbe*, **17**, 820 - 828 (2015): "Cyclic GMP-AMP Synthase Is an Innate Immune DNA Sensor for *Mycobacterium tuberculosis*"