

PRODUCT INFORMATION



2'3'-cGAMP-d₈ (ammonium salt)

Item No. 36908

Formal Name: (5R,7R,8R,12aR,14R,15R,15aS,16R)-7-(2-amino-6-oxo-3,6-dihydro-9H-purin-9-yl)-14-(6-amino-9H-purin-9-yl)-15,16-dihydroxyoctahydro-12H-5,8-methanofuro[3,2-l][1,3,6,9,11]pentaaxa[2,10]diphosphacyclotetradecine-2,10-bis(olate)-4,4,5,12,12,12a,15a,16-d₈ 2,10-dioxide, diammonium salt

Synonyms: Guanosine-Adenosine 2',3'-cyclic monophosphate-d₈, 2'3'-Cyclic GMP-AMP-d₈

MF: C₂₀H₁₄D₈N₁₀O₁₃P₂ • 2NH₄
FW: 716.5

Chemical Purity: ≥98% (2'3'-cGAMP)

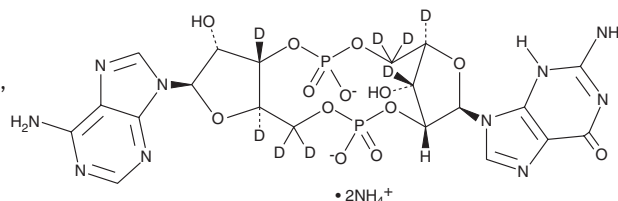
Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₈); ≤1% d₀

Supplied as: A 1:1 solution in acetonitrile:water

Storage: -20°C

Stability: ≥3 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

2'3'-cGAMP-d₈ (ammonium salt) is intended for use as an internal standard for the quantification of 2'3'-cGAMP by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Description

2'3'-cGAMP is a second messenger produced from ATP and GTP by cGMP-AMP synthase (cGAS) in the cytoplasm of mammalian cells in response to the presence of dsDNA.¹⁻³ It contains a non-canonical 2'5'-phosphodiester bond and binds tightly to the adapter protein stimulator of interferon genes (STING) with a K_d value of 3.79 nM, which is significantly lower than that observed for 2'2'-cGAMP (Item No. 22419), 3'3'-cGAMP (Item No. 17966), cyclic di-GMP (Item No. 17144), and 3'2'-cGAMP (K_ds = 0.287, 1.04, 1.21, and 1.61 μM, respectively).³ It is a potent inducer of IFN-β mRNA expression with an EC₅₀ value of 19.4 nM in L929 cells.³

References

1. Sun, L., Wu, J., Du, F., *et al.* Cyclic GMP-AMP synthase is a cytosolic DNA sensor that activates the type I interferon pathway. *Science* **339**(6121), 786-791 (2013).
2. Wu, J., Sun, L., Chen, X., *et al.* Cyclic GMP-AMP is an endogenous second messenger in innate immune signaling by cytosolic DNA. *Science* **339**(6121), 826-830 (2013).
3. Zhang, X., Shi, H., Wu, J., *et al.* Cyclic GMP-AMP containing mixed phosphodiester linkages is an endogenous high-affinity ligand for STING. *Mol. Cell* **51**(2), 226-235 (2013).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

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