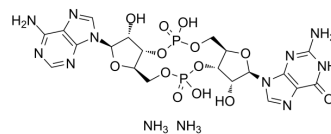


## cGAMP diammonium

|                           |  |
|---------------------------|--|
| <b>Cat. No.:</b>          | HY-110385A   |
| <b>Molecular Formula:</b> | C <sub>20</sub> H <sub>30</sub> N <sub>12</sub> O <sub>13</sub> P <sub>2</sub>   |
| <b>Molecular Weight:</b>  | 708.47   |
| <b>Target:</b>            | STING; Endogenous Metabolite   |
| <b>Pathway:</b>           | Immunology/Inflammation; Metabolic Enzyme/Protease   |
| <b>Storage:</b>           | -20°C, sealed storage, away from moisture<br>* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture) |



### SOLVENT & SOLUBILITY

|   |  |                      |             |             |             |              |
|---|--|----------------------|-------------|-------------|-------------|--------------|
| <b>In Vitro</b>   | H <sub>2</sub> O : 100 mg/mL (141.15 mM; Need ultrasonic)  |                      |             |             |             |              |
|   | <b>Preparing Stock Solutions</b>   | <b>Solvent</b>       | <b>Mass</b> | <b>1 mg</b> | <b>5 mg</b> | <b>10 mg</b> |
|   |  | <b>Concentration</b> |             |             |             |              |
|   |  | <b>1 mM</b>          |             | 1.4115 mL   | 7.0575 mL   | 14.1149 mL   |
|   |  | <b>5 mM</b>          |             | 0.2823 mL   | 1.4115 mL   | 2.8230 mL    |
|   | <b>10 mM</b>   |                      | 0.1411 mL   | 0.7057 mL   | 1.4115 mL   |              |
| Please refer to the solubility information to select the appropriate solvent. |  |                      |             |             |             |              |
| <b>In Vivo</b>  | 1. Add each solvent one by one: PBS<br>Solubility: 33.33 mg/mL (47.05 mM); Clear solution; Need ultrasonic |                      |             |             |             |              |

### BIOLOGICAL ACTIVITY

|                                     |  |
|-------------------------------------|--|
| <b>Description</b>                  | cGAMP (Cyclic GMP-AMPP) diammonium functions as an endogenous second messenger in metazoans and triggers interferon production in response to cytosolic DNA. cGAMP diammonium activates stimulator of interferon genes (STING), which activates a signaling cascade leading to the production of type I interferons and other immune mediators <sup>[1][2][3][4]</sup> .   |
| <b>IC<sub>50</sub> &amp; Target</b> | Human Endogenous Metabolite  |
| <b>In Vitro</b>                     | cGAMP diammonium promotes the antigen-specific proliferation capacity of spleen cells in mice <sup>[2]</sup> .<br>cGAMP diammonium directly activates murine and human dendritic cells in vitro <sup>[2]</sup> .<br>On stimulation with cGAMP diammonium, fibroblasts from the patients showed increased transcription of IFNB1 but not of the genes encoding interleukin-1 (IL1), interleukin-6 (IL6), or tumor necrosis factor (TNF) <sup>[3]</sup> .<br>cGAMP diammonium activates the endoplasmic reticulum (ER)-resident receptor STING, thereby inducing an antiviral state and the secretion of type I IFNs <sup>[4]</sup> .<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## In Vivo

cGAMP (5 µg; nostril mucosal adjuvant) diammonium promotes the antigen-specific cytokine production by spleen cells of immunized mice<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

|                 |  |
|-----------------|--|
| Animal Model:   | Female C57BL/6 (H-2b) mice 6-8 weeks old <sup>[2]</sup>  |
| Dosage:         | 5 µg   |
| Administration: | Nostril mucosal adjuvant   |
| Result:         | Higher titers of ovalbumin (OVA)-specific IgA and total IgG as well as IgG1 and IgG2c in the sera of mice immunized with cGAMP-adjuvanted OVA as compared to sera from OVA-immunized mice. |

## CUSTOMER VALIDATION

- Chem Eng J. 2022: 140190.
- Biomaterials. 2023 Mar 31, 122104.
- J Nanobiotechnology. 2022 Jan 6;20(1):23.
- Cell Rep. 2023 Apr 5;42(4):112328.
- Biochem Pharmacol. 2023 May 19;213:115618.

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## REFERENCES

- [1]. Wu J, et al. Cyclic GMP-AMP is an endogenous second messenger in innate immune signaling by cytosolic DNA. Science. 2013 Feb 15;339(6121):826-30.
- [2]. Skrnjug I, et al. Cyclic GMP-AMP displays mucosal adjuvant activity in mice. PLoS One. 2014 Oct 8;9(10):e110150.
- [3]. Ablasser A, et al. Cell intrinsic immunity spreads to bystander cells via the intercellular transfer of cGAMP. Nature. 2013 Nov 28;503(7477):530-4.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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