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Produktinformation



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Lieferung & Zahlungsart

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Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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PRODUCT INFORMATION



cGAS (human, recombinant)

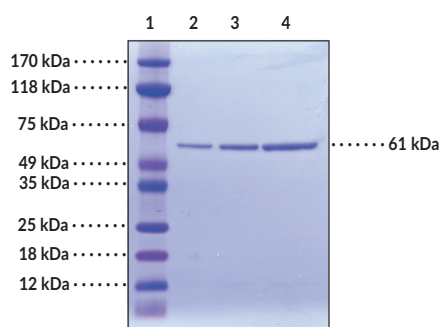
Item No. 22810

Overview and Properties

Synonyms:	C6orf150, 2'3'-cGAMP Synthase, cGAMP Synthase, h-cGAS, Cyclic GMP-AMP Synthase, EC: 2.7.7.86, Mab-21 domain containing protein 1, MB21D1
Source:	Active recombinant N-terminal His-tagged protein expressed in <i>E. coli</i>
Amino acids:	2-543 (full length)
Uniprot No.:	Q8N884
Molecular Weight:	61 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	batch specific (≥90% estimated by SDS-PAGE)
Supplied in:	50 mM HEPES, pH 8.0, with 300 mM sodium chloride, and 10% glycerol
Protein concentration:	batch specific mg/ml
Activity:	batch specific U/ml
Specific Activity:	batch specific U/mg
Unit Definition:	One unit of cGAS produces 1 nmole of cGAMP per minute at 37°C in 80 mM Tris-HCL, pH 7.5, containing 200 mM NaCl, 20 μM ZnCL ₂ , and 20 mM MgCl ₂ with 4 μg circular DNA (3623 bp) and 0.25 mM each of GTP and ATP.

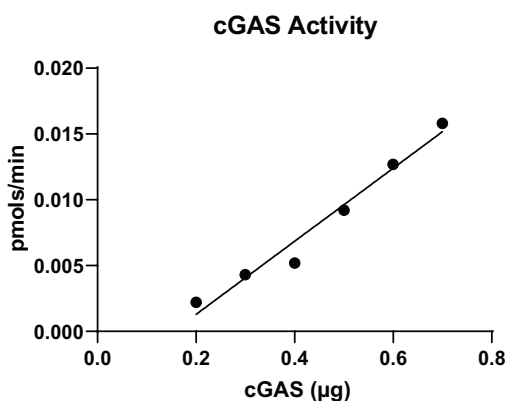
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: cGAS (1 μg)
Lane 3: cGAS (2 μg)
Lane 4: cGAS (4 μg)

Representative gel image shown; actual purity may vary between batches.



cGAS production of cGAMP was detected using Cayman's 2'3'-cGAMP ELISA Kit (Item No. 501700)

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
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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PRODUCT INFORMATION



Description

Cyclic GMP-AMP (cGAMP) synthase (cGAS) is a nucleotidyltransferase located in the cytosol that acts as a cytosolic DNA sensor to detect foreign DNA from microbial pathogens as part of the innate immune response.^{1,2} Upon binding to cytosolic DNA, cGAS produces the cyclic dinucleotide second messenger cGAMP, which activates stimulator of interferon genes (STING), leading to activation of the type I interferon (IFN) pathway.¹⁻³ *In vitro*, fibroblasts, macrophages, and dendritic cells isolated from cGAS knockout (cGAS^{-/-}) mice do not produce type I IFNs following DNA transfection or DNA virus infection.⁴ Similarly, cells containing a frame-shift mutation in the cGAS locus fail to mount an immune response to HIV and other retroviruses.⁵ *In vivo*, cGAS^{-/-} mice infected with herpes simplex virus 1 (HSV-1) have lower levels of IFN- α and IFN- β , shorter survival times, and higher post-mortem levels of HSV-1 in the brain.⁴

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. Ablasser, A., Goldeck, M., Cavlar, T., *et al.* cGAS produces a 2'-5'-linked cyclic dinucleotide second messenger that activates STING. *Nature* **498**(7454), 380-384 (2013).
4. Li, X.-D., Wu, J., Gao, D., *et al.* Pivotal roles of cGAS-cGAMP signaling in antiviral defense and immune adjuvant effects. *Science* **341**(6152), 1390-1394 (2013).
5. Gao, D., Wu, J., Wu, Y.-T., *et al.* Cyclic GMP-AMP synthase is an innate immune sensor of HIV and other retroviruses. *Science* **341**(6148), 903-906 (2013).

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