

PRODUCT INFORMATION



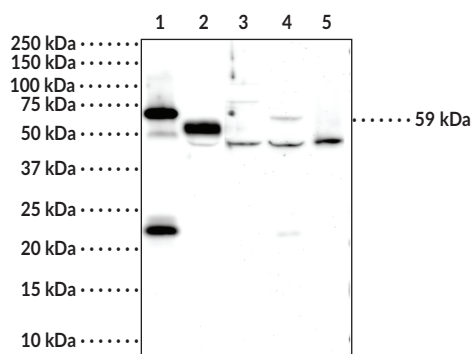
cGAS Monoclonal Antibody (Clone 5G10)

Item No. 23853

Overview and Properties

Contents: This vial contains 300 µg of protein G-purified IgG
Synonyms: C6orf150, cGAMP synthase, h-cGAS, Cyclic GMP-AMP synthase, Mab-21 domain-containing protein 1, MB21D1
Immunogen: Full length human recombinant protein
Species Reactivity: (+) Human cGAS; other species not tested
Uniprot No.: Q8N884
Form: Liquid
Storage: -20°C (as supplied)
Stability: ≥1 year
Storage Buffer: PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone: 5G10
Host: Mouse
Isotype: IgG2A
Applications: Immunofluorescence (IF), Immunoprecipitation (IP), and Western blot (WB); the recommended starting dilution for WB is 1:333. IF, IP, and other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



Lane 1: cGAS Recombinant Protein (0.01 µg)
Lane 2: Raji Cell Lysate (50 µg)
Lane 3: Jurkat Cell Lysate (50 µg)
Lane 4: THP-1 Cell Lysate (50 µg)
Lane 5: HepG2 Cell Lysate (50 µg)

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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Description

Cyclic GMP-AMP (cGAMP) synthase (cGAS; Item No. 22810) 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 HSV1 in the brain.⁴ Cayman's cGAS Monoclonal Antibody (Clone 5G10) recognizes the full length human cGAS protein at ~59 kDa.

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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