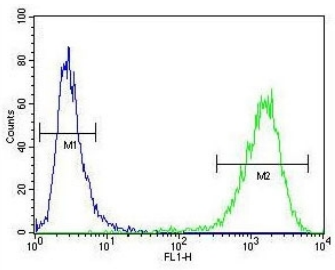
cGAMP Synthase Antibody / cGAS (F54548)

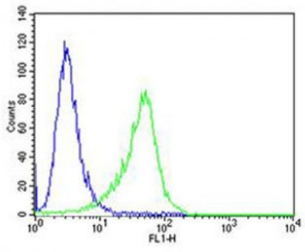
Catalog No.	Formulation	Size
F54548-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F54548-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

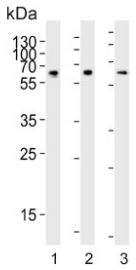
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
UniProt	Q8N884
Applications	Flow cytometry: 1:25 (1x10e6 cells) Western blot: 1:500-1:2000
Limitations	This cGAMP Synthase antibody is available for research use only.



Flow cytometry testing of human MDA-MB-231 cells with cGAMP Synthase antibody; Blue=isotype control, Green= cGAMP Synthase antibody.



Flow cytometry testing of human A549 cells with cGAMP Synthase antibody; Blue=isotype control, Green= cGAMP Synthase antibody.



Western blot testing of human 1) HT-29, 2) ThP-1 and 3) cerebellum lysate with cGAMP Synthase antibody. Predicted molecular weight ~59 kDa.

Description

cGAMP Synthase Antibody / cGAS recognizes cyclic GMP-AMP synthase (cGAS), a cytosolic enzyme that serves as a primary sensor of double-stranded DNA and initiates innate immune signaling through the production of cyclic GMP-AMP (cGAMP). Upon binding cytoplasmic DNA derived from pathogens or damaged host cells, cGAS synthesizes cGAMP, a second messenger that activates the STING signaling pathway and induces expression of type I interferons and other inflammatory mediators. Because cGAMP production represents the initiating event in this pathway, cGAMP Synthase Antibody / cGAS is widely used to investigate innate immunity, antiviral defense, inflammation, and cancer immunology.

cGAMP synthase occupies a central position in host defense by converting the detection of cytosolic DNA into downstream immune activation. Binding of cGAMP to STING triggers signaling through TBK1 and IRF3, leading to transcription of interferon-stimulated genes and pro-inflammatory cytokines that coordinate antiviral and antibacterial immune responses. Beyond pathogen recognition, cGAS also responds to mitochondrial DNA release, chromosomal instability, cellular senescence, and DNA damage, linking innate immune surveillance with maintenance of genomic integrity and tissue homeostasis.

Dysregulation of cGAS activity has been implicated in numerous pathological conditions, including autoimmune diseases, chronic inflammatory disorders, viral infections, neurodegenerative diseases, and cancer. Excessive activation by self-DNA may drive autoinflammatory disease, whereas impaired cGAS signaling can reduce antiviral immunity and diminish antitumor immune surveillance. Consequently, therapeutic targeting of the cGAS-STING pathway has become an area of considerable interest, making cGAS an important biomarker in immunology, oncology, and translational medicine.

NSJ Bioreagents' cGAMP Synthase Antibody / cGAS supports investigations into cGAMP synthesis, cytosolic DNA sensing, STING pathway activation, innate immune signaling, antiviral defense, inflammatory responses, DNA damage signaling, and cancer biology. Reliable detection of cGAS enables researchers to study the enzyme responsible for initiating one of the body's most important innate immune signaling pathways.

Learn more about the biological functions, applications, and validated products on our cGAS Antibody / Cytosolic DNA Sensor Antibody page.

Application Notes

The stated application concentrations are suggested starting points. Titration of the cGAMP Synthase antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 266-295 from the human protein was used as the immunogen for the cGAMP Synthase antibody .

Storage

Aliquot the cGAMP Synthase antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

cGAMP Synthase antibody, cGAS antibody, Cyclic GMP-AMP Synthase antibody, Cytosolic DNA Sensor antibody, MB21D1 antibody, DNA Sensor antibody

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