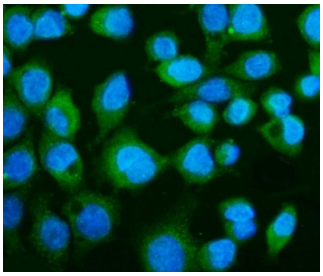
cGAS Antibody / cGAMP Synthase (RQ6412)

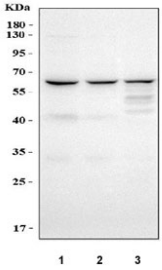
Catalog No.	Formulation	Size
RQ6412	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

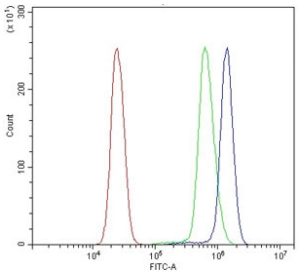
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q8N884
Localization	Cytoplasmic, nuclear
Applications	Western blot: 0.5-1ug/ml Immunofluorescence (FFPE): 5ug/ml Flow cytometry: 1-3ug/million cells Direct ELISA: 0.1-0.5ug/ml Immunohistochemistry: 2-5ug/ml
Limitations	This cGAS antibody is available for research use only.



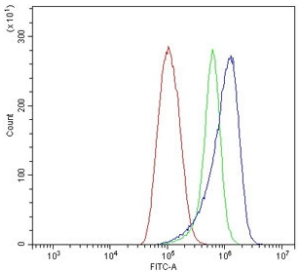
Immunofluorescent staining of FFPE human Caco-2 cells with cGAS antibody (green) and DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min.



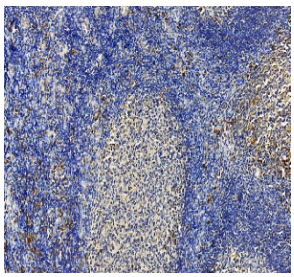
Western blot testing of human 1) HeLa, 2) Caco-2 and 3) A431 cell lysate with cGAS antibody. Predicted molecular weight ~59 kDa.



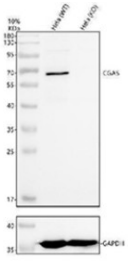
Flow cytometry testing of human U937 cells with cGAS antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= cGAS antibody.



Flow cytometry testing of human ThP-1 cells with cGAS antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= cGAS antibody.



cGAS Antibody Human Tonsil IHC. Immunohistochemical staining of FFPE human tonsil tissue with cGAS antibody at 2 ug/ml. Heat-induced epitope retrieval (HIER) was performed by boiling tissue sections in pH 8 EDTA buffer prior to staining. cGAS immunoreactivity is observed predominantly within the cytoplasm of scattered lymphoid cells throughout the tonsil, consistent with the expected localization of this innate immune DNA sensor involved in activation of the cGAS-STING signaling pathway. Cell nuclei are counterstained with hematoxylin (blue).



cGAS Antibody Human HeLa WT vs cGAS Knockout WB. Western blot testing of 1) human HeLa wild-type and 2) human HeLa cGAS knockout whole cell lysates with cGAS antibody at 0.5 ug/ml. A specific band is detected at approximately 59 kDa in the wild-type lysate but is absent in the CGAS knockout lysate, confirming the specificity of the antibody for endogenous cGAS. GAPDH serves as the loading control and demonstrates comparable protein loading between samples. The observed molecular weight is consistent with the predicted molecular weight of approximately 59 kDa.

Description

cGAS Antibody / cGAMP Synthase recognizes cyclic GMP-AMP synthase (cGAS), an essential cytosolic enzyme that functions as the primary sensor of double-stranded DNA within the cytoplasm. Upon binding foreign or mislocalized self-DNA, cGAS catalyzes the synthesis of cyclic GMP-AMP (cGAMP), a second messenger that activates the STING signaling pathway. This signaling cascade stimulates the production of type I interferons and pro-inflammatory cytokines, forming a critical component of the innate immune response against viral, bacterial, and other pathogenic threats. As a result, cGAS Antibody / cGAMP Synthase is widely used to study innate immunity, host defense, inflammation, and cancer biology.

As the enzyme responsible for cGAMP production, cGAS occupies a central position in DNA sensing pathways that protect cells from infection and genomic instability. Following activation, cGAMP binds to STING on the endoplasmic reticulum membrane, initiating downstream signaling through TBK1 and IRF3 that ultimately drives transcription of interferon-stimulated genes. In addition to pathogen recognition, cGAS participates in responses to mitochondrial DNA release, chromosomal instability, cellular senescence, and DNA damage, linking innate immune signaling with cellular stress responses and tissue homeostasis.

Abnormal regulation of cGAS activity has been associated with autoimmune diseases, chronic inflammatory disorders, viral infections, neurodegenerative diseases, and numerous cancers. Persistent activation by self-DNA can promote pathological inflammation, whereas reduced cGAS signaling may impair antiviral immunity and tumor immune surveillance. Because therapeutic modulation of the cGAS-STING pathway is an active area of drug development, cGAS has become an important biomarker in immunology, oncology, infectious disease, and translational medicine.

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

Optimal dilution of the cGAS antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids L208-F522) was used as the immunogen for the cGAS antibody.

Storage

After reconstitution, the cGAS antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

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

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