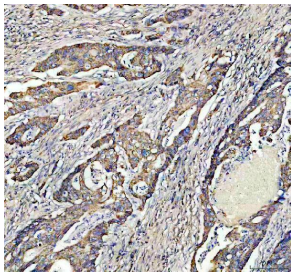
# cGAS Antibody / Cytosolic DNA Sensor Antibody (FY13465)

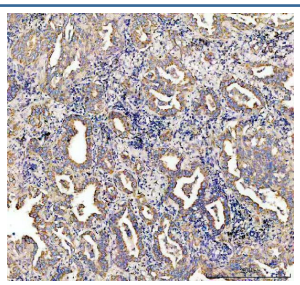
| Catalog No. | Formulation | Size |
|---|---|---|
| FY13465 | 0.5mg/ml if reconstituted with 0.2ml sterile DI water | 100 ug |

**Bulk quote request**

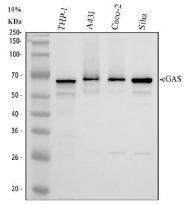
| | |
|---|---|
| **Species Reactivity** | Human, Mouse |
| **Format** | Lyophilized |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit IgG |
| **Purity** | Antigen affinity purification |
| **UniProt** | Q8N884 |
| **Applications** | Western blot: 0.5-1ug/ml<br>Immunohistochemistry (FFPE): 2-5ug/ml |
| **Limitations** | This cGAS Antibody / Cytosolic DNA Sensor Antibody is available for research use only. |



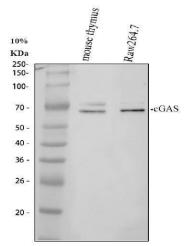
cGAS Antibody / Cytosolic DNA Sensor Antibody Human Colon Cancer IHC. Immunohistochemical staining of FFPE human colon cancer tissue using cGAS Antibody / Cytosolic DNA Sensor Antibody. cGAS expression is detected predominantly within the cytoplasm of tumor cells, consistent with its role as an innate immune DNA sensor that recognizes cytosolic double-stranded DNA and activates the cGAS-STING signaling pathway. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to staining. Tissue sections were blocked with 10% goat serum and incubated with the primary antibody (2 ug/ml) overnight at 4Â°C, followed by a peroxidase-conjugated goat anti-rabbit IgG secondary antibody. Immunoreactivity was visualized using an HRP Super Vision detection system with DAB as the chromogen.



cGAS Antibody / Cytosolic DNA Sensor Antibody Human Lung Cancer IHC. Immunohistochemical staining of FFPE human lung cancer tissue using cGAS Antibody / Cytosolic DNA Sensor Antibody. cGAS expression is detected predominantly within the cytoplasm of tumor cells, consistent with its function as an innate immune DNA sensor that recognizes cytosolic double-stranded DNA and initiates cGAS-STING signaling. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to staining. Tissue sections were blocked with 10% goat serum and incubated with the primary antibody (2 ug/ml) overnight at 4Â°C, followed by a peroxidase-conjugated goat anti-rabbit IgG secondary antibody. Immunoreactivity was visualized using an HRP Super Vision detection system with DAB as the chromogen.




cGAS Antibody / Cytosolic DNA Sensor Antibody Human Cell WB. Western blot analysis of 1) human THP-1, 2) human A431, 3) human CACO-2, and 4) human SiHa cell lysates using cGAS Antibody / Cytosolic DNA Sensor Antibody. A specific immunoreactive band is detected at approximately 59-65 kDa in all tested cell lines, consistent with cGAS expression. The predicted molecular weight of cGAS is approximately 58 kDa. These results demonstrate reliable detection of cGAS, a cytosolic DNA sensor that activates the cGAS-STING signaling pathway to initiate innate immune responses, type I interferon production, and inflammatory signaling following recognition of cytoplasmic double-stranded DNA.




cGAS Antibody / Cytosolic DNA Sensor Antibody Mouse WB. Western blot analysis of 1) mouse thymus tissue and 2) mouse RAW264.7 cell lysates using cGAS Antibody / Cytosolic DNA Sensor Antibody. A specific immunoreactive band is detected at approximately 59-65 kDa in both samples, consistent with cGAS expression. The predicted molecular weight of cGAS is approximately 58 kDa. These results demonstrate reliable detection of cGAS in mouse immune tissues and macrophage-derived cells, supporting its established role as a cytosolic DNA sensor that activates the cGAS-STING signaling pathway during innate immune and inflammatory responses.

## Description

cGAS Antibody / Cytosolic DNA Sensor Antibody recognizes cyclic GMP-AMP synthase (cGAS), a key innate immune receptor that detects double-stranded DNA within the cytoplasm and initiates antiviral and inflammatory signaling. Under normal physiological conditions, DNA is confined to the nucleus and mitochondria, making the presence of cytosolic DNA an important indicator of viral infection, bacterial invasion, cellular stress, or genomic instability. Upon binding cytoplasmic DNA, cGAS catalyzes the synthesis of cyclic GMP-AMP (cGAMP), a second messenger that activates the STING signaling pathway and induces production of type I interferons and other inflammatory cytokines. Consequently, cGAS Antibody / Cytosolic DNA Sensor Antibody is widely used to investigate innate immunity, host defense, inflammation, and cancer biology.

Activation of the cGAS-STING pathway serves as one of the body's principal mechanisms for detecting pathogenic DNA and damaged self-DNA. Following activation, cGAMP binds to STING on the endoplasmic reticulum membrane, triggering signaling cascades involving TBK1 and IRF3 that culminate in transcription of interferon-stimulated genes and pro-inflammatory mediators. Beyond antiviral immunity, cGAS contributes to immune surveillance of tumor cells, regulation of cellular senescence, responses to DNA damage, and maintenance of genomic integrity. Tight regulation of cGAS activity is therefore essential for balancing effective immune protection while limiting inappropriate inflammatory responses.

Dysregulated cGAS signaling has been implicated in numerous diseases, including autoimmune disorders, chronic inflammatory diseases, viral infections, neurodegenerative conditions, and multiple cancers. Excessive activation by self-DNA contributes to autoinflammatory syndromes and tissue injury, whereas impaired cGAS function can reduce antiviral immunity and weaken antitumor immune responses. Because pharmacologic modulation of the cGAS-STING pathway has become an active area of therapeutic development, cGAS has emerged as an important biomarker in immunology, oncology, infectious disease, and translational research.

NSJ Bioreagents' cGAS Antibody / Cytosolic DNA Sensor Antibody supports investigations into innate immune signaling, cytosolic DNA sensing, STING pathway activation, antiviral defense, inflammatory responses, cancer immunology, and DNA damage signaling. Reliable detection of cGAS enables researchers to study one of the central regulators of innate immune recognition and interferon-mediated host defense.

Explore additional antibodies involved in innate immunity, cytosolic DNA sensing, and antiviral host defense on our Immunology Antibodies page.

## Application Notes

Optimal dilution of the cGAS Antibody / Cytosolic DNA Sensor Antibody should be determined by the researcher.

## Immunogen

A synthetic partial protein derived from human cGAMP Synthase protein (amino acids A352-F504) was used as the immunogen for the cGAS Antibody.

## Storage

cGAS Antibody is stable at -20oC for one year from date of receipt. After reconstitution, at 4oC for one month. It can also be aliquoted and stored frozen at -20oC for six months. Avoid repeated freeze-thaw cycles.

## Alternate Names

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


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