

GBP1 Antibody / Guanylate-binding protein 1 (FY12213)

Catalog No.	Formulation	Size
FY12213	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P32455
Applications	ELISA: 0.1-0.5ug/ml Flow Cytometry: 1-3ug/million cells Immunoprecipitation: 2-4ug/500ug of lysate Immunofluorescence: 5ug/ml Immunohistochemistry: 2-5ug/ml Immunocytochemistry: 5ug/ml Western Blot: 0.25-0.5ug/ml
Limitations	This GBP1 antibody is available for research use only.

Description

GBP1 antibody detects Guanylate-binding protein 1, encoded by the GBP1 gene on chromosome 1p22.2. GBP1 antibody is commonly used in research on interferon signaling, pathogen defense, and inflammation. GBP1 is a large GTP-binding protein induced by interferons, particularly IFN g, and plays roles in innate immunity by targeting intracellular pathogens and regulating inflammatory signaling. Expression is strongly upregulated in response to infection and cytokines, and is observed in immune and endothelial cells.

Structurally, GBP1 is a dynamin-related large GTPase of ~67 kDa, containing an N-terminal GTPase domain and a C-terminal helical domain that mediates oligomerization and membrane binding. GBP1 hydrolyzes GTP to GDP and GMP, with high turnover capacity. Its ability to oligomerize and associate with pathogen-containing vacuoles allows it to mediate host defense functions.

Functionally, GBP1 restricts pathogen replication by associating with vacuoles containing bacteria or parasites such as Chlamydia, Toxoplasma, and Listeria. It disrupts pathogen membranes and recruits autophagy machinery for clearance. GBP1 also modulates inflammatory signaling by regulating caspase activation and NF-kB responses. Knockdown of GBP1 impairs interferon-induced resistance to intracellular pathogens. Researchers use GBP1 antibody to investigate cell-autonomous immunity, GTPase biology, and inflammatory signaling.

Clinically, GBP1 is linked to infection, inflammation, and cancer. High GBP1 expression correlates with improved control of infections and contributes to resistance against intracellular pathogens. In cancer, GBP1 shows context-dependent roles: in some tumors it is a marker of interferon response and favorable prognosis, while in others it promotes chemoresistance and tumor progression. GBP1 expression is also studied as a biomarker of interferon activity in autoimmune diseases. NSJ Bioreagents provides GBP1 antibody to support research in infection biology, cancer, and immunology.

Experimentally, GBP1 antibody is used in western blotting to detect the ~67 kDa protein, in immunofluorescence microscopy to study pathogen vacuole targeting, and in immunohistochemistry to assess tissue expression. Co-immunoprecipitation with GBP1 antibody reveals interaction networks with autophagy proteins and signaling regulators.

Application Notes

Optimal dilution of the GBP1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human GBP1 recombinant protein (Position: E190-S592) was used as the immunogen for the GBP1 antibody.

Storage

After reconstitution, the GBP1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.