

Anti-GBP1 Antibody
Catalog # AP53884

Specification

Anti-GBP1 Antibody - Product Information

Application	WB
Primary Accession	P32455
Reactivity	Human, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	67931

Anti-GBP1 Antibody - Additional Information

Gene ID 2633

Other Names

Interferon-induced guanylate-binding protein 1; GTP-binding protein 1; GBP-1; HuGBP-1; Guanine nucleotide-binding protein 1

Target/Specificity

KLH-conjugated synthetic peptide encompassing a sequence within the center region of human GBP1. The exact sequence is proprietary.

Dilution

WB ~ 1/500 - 1/1000

Format

Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.09% (W/V) sodium azide.

Storage

Store at -20 °C. Stable for 12 months from date of receipt

Anti-GBP1 Antibody - Protein Information

Name GBP1 {ECO:0000303|PubMed:7512561, ECO:0000312|HGNC:HGNC:4182}

Function

Interferon (IFN)-inducible GTPase that plays important roles in innate immunity against a diverse range of bacterial, viral and protozoan pathogens (PubMed:16511497, PubMed:22106366, PubMed:29144452, PubMed:31268602, PubMed:32510692, PubMed:32581219, PubMed:37797010, PubMed:<a

[7512561](http://www.uniprot.org/citations/7512561)). Hydrolyzes GTP to GMP in two consecutive cleavage reactions: GTP is first hydrolyzed to GDP and then to GMP in a processive manner (PubMed:[16511497](http://www.uniprot.org/citations/16511497), PubMed:[32510692](http://www.uniprot.org/citations/32510692), PubMed:[7512561](http://www.uniprot.org/citations/7512561)). Following infection, recruited to the pathogen-containing vacuoles or vacuole-escaped bacteria and promotes both inflammasome assembly and autophagy (PubMed:[29144452](http://www.uniprot.org/citations/29144452), PubMed:[31268602](http://www.uniprot.org/citations/31268602)). Acts as a positive regulator of inflammasome assembly by facilitating the detection of inflammasome ligands from pathogens (PubMed:[31268602](http://www.uniprot.org/citations/31268602), PubMed:[32510692](http://www.uniprot.org/citations/32510692), PubMed:[32581219](http://www.uniprot.org/citations/32581219)). Involved in the lysis of pathogen-containing vacuoles, releasing pathogens into the cytosol (By similarity). Following pathogen release in the cytosol, forms a protein coat in a GTPase-dependent manner that encapsulates pathogens and promotes the detection of ligands by pattern recognition receptors (PubMed:[32510692](http://www.uniprot.org/citations/32510692), PubMed:[32581219](http://www.uniprot.org/citations/32581219)). Plays a key role in inflammasome assembly in response to infection by Gram-negative bacteria: following pathogen release in the cytosol, forms a protein coat that encapsulates Gram-negative bacteria and directly binds to lipopolysaccharide (LPS), disrupting the O-antigen barrier and unmasking lipid A that is that detected by the non-canonical inflammasome effector CASP4/CASP11 (PubMed:[32510692](http://www.uniprot.org/citations/32510692), PubMed:[32581219](http://www.uniprot.org/citations/32581219)). Also promotes recruitment of proteins that mediate bacterial cytolysis, leading to release double-stranded DNA (dsDNA) that activates the AIM2 inflammasome (PubMed:[31268602](http://www.uniprot.org/citations/31268602)). Involved in autophagy by regulating bacteriolytic peptide generation via its interaction with ubiquitin-binding protein SQSTM1, which delivers monoubiquitinated proteins to autolysosomes for the generation of bacteriolytic peptides (By similarity). Confers protection to several pathogens, including the bacterial pathogens *L.monocytogenes* and *M.bovis* BCG as well as the protozoan pathogen *T.gondii* (PubMed:[31268602](http://www.uniprot.org/citations/31268602)). Exhibits antiviral activity against influenza virus (PubMed:[22106366](http://www.uniprot.org/citations/22106366)).

Cellular Location

Cytoplasmic vesicle membrane; Lipid-anchor; Cytoplasmic side. Golgi apparatus membrane; Lipid-anchor; Cytoplasmic side. Cell membrane; Lipid-anchor; Cytoplasmic side. Cytoplasm, cytosol. Secreted. Note=Localizes to pathogen-containing vacuoles or to the cell surface of bacteria that escaped vacuoles (PubMed:29144452, PubMed:31268602, PubMed:32510692, PubMed:32581219) Secreted from endothelial cells in the cerebrospinal fluid, upon bacterial challenge and independently of IFNG induction (PubMed:16936281). Golgi membrane localization requires isoprenylation and the presence of another IFNG-induced factor (PubMed:15937107) Sequestered in the cytosol following phosphorylation by PIM1 and subsequent interaction with 14-3-3 protein sigma (SFN) (PubMed:37797010).

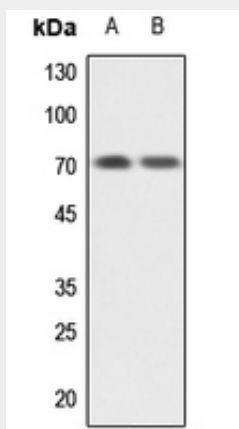
Anti-GBP1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)

- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-GBP1 Antibody - Images



Western blot analysis of GBP1 expression in HEK293T (A), H446 (B) whole cell lysates.

Anti-GBP1 Antibody - Background

Rabbit polyclonal antibody to GBP1