

**GBP1 Antibody**  
Rabbit mAb  
Catalog # AP92681

## Specification

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### GBP1 Antibody - Product Information

Application	WB, IHC, ICC
Primary Accession	<a href="#">P32455</a>
Clonality	Monoclonal
<b>Other Names</b>	
GBP1; GTP binding protein 1; Guanine nucleotide binding protein 1; Guanylate binding protein 1; HuGBP1; Interferon induced guanylate binding protein 1;	
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	67931 Da

### GBP1 Antibody - Additional Information

Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human GBP1
Description	Binds GTP, GDP and GMP.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

### 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](http://www.uniprot.org/citations/16511497), PubMed: [22106366](http://www.uniprot.org/citations/22106366), PubMed: [29144452](http://www.uniprot.org/citations/29144452), PubMed: [31268602](http://www.uniprot.org/citations/31268602), PubMed: [32510692](http://www.uniprot.org/citations/32510692), PubMed: [32581219](http://www.uniprot.org/citations/32581219), PubMed: [37797010](http://www.uniprot.org/citations/37797010), PubMed: [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:<a href="http://www.uniprot.org/citations/29144452" target="\_blank">29144452</a>, PubMed:<a href="http://www.uniprot.org/citations/31268602" target="\_blank">31268602</a>). Acts as a positive regulator of inflammasome assembly by facilitating the detection of inflammasome ligands from pathogens (PubMed:<a href="http://www.uniprot.org/citations/31268602" target="\_blank">31268602</a>, PubMed:<a href="http://www.uniprot.org/citations/32510692" target="\_blank">32510692</a>, PubMed:<a href="http://www.uniprot.org/citations/32581219" target="\_blank">32581219</a>). 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:<a href="http://www.uniprot.org/citations/32510692" target="\_blank">32510692</a>, PubMed:<a href="http://www.uniprot.org/citations/32581219" target="\_blank">32581219</a>). 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:<a href="http://www.uniprot.org/citations/32510692" target="\_blank">32510692</a>, PubMed:<a href="http://www.uniprot.org/citations/32581219" target="\_blank">32581219</a>). Also promotes recruitment of proteins that mediate bacterial cytolysis, leading to release double-stranded DNA (dsDNA) that activates the AIM2 inflammasome (PubMed:<a href="http://www.uniprot.org/citations/31268602" target="\_blank">31268602</a>). 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:<a href="http://www.uniprot.org/citations/31268602" target="\_blank">31268602</a>). Exhibits antiviral activity against influenza virus (PubMed:<a href="http://www.uniprot.org/citations/22106366" target="\_blank">22106366</a>).

### Cellular Location

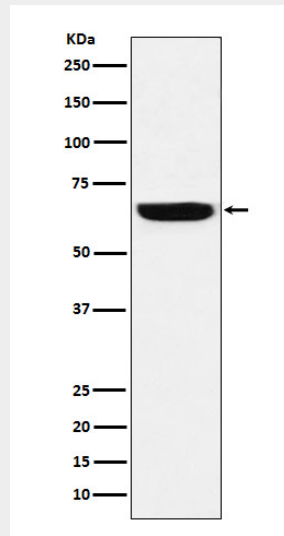
Cytoplasmic vesicle membrane; Lipid-anchor; Cytoplasmic side. Golgi apparatus membrane; Lipid-anchor; Cytoplasmic side. Cell membrane; Lipid-anchor; Cytoplasmic side. Cytoplasm, cytosol. Secreted. Note=Localizes to pathogen-containing vacuoles or to the cell surface of bacteria that escaped vacuoles (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).

### 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](#)

### GBP1 Antibody - Images



Western blot analysis of GBP1 expression in HeLa cell lysate.