

Anti-GBP1 Rabbit Monoclonal Antibody

Catalog # ABO16098

Product Information

Application	WB, IHC, IF, ICC
Primary Accession	P32455
Host	Rabbit
Isotype	IgG
Reactivity	Human
Clonality	Monoclonal
Format	Liquid
Description	Anti-GBP1 Rabbit Monoclonal Antibody . Tested in WB, IHC, ICC/IF applications. This antibody reacts with Human.

Additional Information

Gene ID	2633
Other Names	Guanylate-binding protein 1, 3.6.1.-, 3.6.5.-, GTP-binding protein 1, GBP-1, HuGBP-1, hGBP1, Guanine nucleotide-binding protein 1, Interferon-induced guanylate-binding protein 1, GBP1 {ECO:0000303 PubMed:7512561, ECO:0000312 HGNC:HGNC:4182}
Calculated MW	67931
Application Details	WB 1:500-1:2000 IHC 1:50-1:200 ICC/IF 1:50-1:200
Source	Eukaryota
Contents	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
Clone Names Immunogen	Clone: 26G77 A synthesized peptide derived from human GBP1
Purification	Affinity-chromatography
Storage	Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.

Protein Information

Name	GBP1 {ECO:0000303 PubMed:7512561, ECO:0000312 HGNC:HGNC:4182}
Function	Interferon (IFN)-inducible GTPase that plays important roles in innate

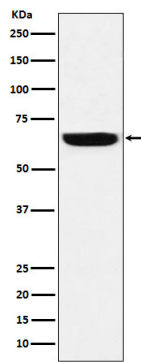
immunity against a diverse range of bacterial, viral and protozoan pathogens (PubMed:[16511497](#), PubMed:[22106366](#), PubMed:[29144452](#), PubMed:[31268602](#), PubMed:[32510692](#), PubMed:[32581219](#), PubMed:[37797010](#), PubMed:[7512561](#)). Hydrolyzes GTP to GMP in two consecutive cleavage reactions: GTP is first hydrolyzed to GDP and then to GMP in a processive manner (PubMed:[16511497](#), PubMed:[32510692](#), PubMed:[7512561](#), PubMed:[39394410](#)). Following infection, recruited to the pathogen- containing vacuoles or vacuole-escaped bacteria and promotes both inflammasome assembly and autophagy (PubMed:[29144452](#), PubMed:[31268602](#)). Acts as a positive regulator of inflammasome assembly by facilitating the detection of inflammasome ligands from pathogens (PubMed:[31268602](#), PubMed:[32510692](#), PubMed:[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](#), PubMed:[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](#), PubMed:[32581219](#)). Also promotes recruitment of proteins that mediate bacterial cytolysis, leading to release double- stranded DNA (dsDNA) that activates the AIM2 inflammasome (PubMed:[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](#)). Exhibits antiviral activity against influenza virus (PubMed:[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](#)).

Images

Western blot analysis of GBP1 expression in HeLa cell lysate.



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