

GBP5 Antibody

Catalog # ASC11651

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q96PP8
Other Accession	NP_443174 , 16418425
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	66617
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	GBP5 Antibody can be used for detection of GBP5 by Western blot at 1 μ g/mL.

Additional Information

Gene ID	115362
Other Names	Guanylate-binding protein 5, GBP-TA antigen, GTP-binding protein 5, GBP-5, Guanine nucleotide-binding protein 5, GBP5
Target/Specificity	GBP5; GBP5 antibody is predicted to not cross-react with other GBP family members.
Reconstitution & Storage	GBP5 antibody can be stored at 4°C for three months and -20°C, stable for up to one year.
Precautions	GBP5 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	GBP5 {ECO:0000303 PubMed:20180847, ECO:0000312 HGNC:HGNC:19895}
Function	Interferon (IFN)-inducible GTPase that plays important roles in innate immunity against a diverse range of bacterial, viral and protozoan pathogens (By similarity). Hydrolyzes GTP, but in contrast to other family members, does not produce GMP (PubMed: 20180847). Following infection, recruited to the pathogen-containing vacuoles or vacuole- escaped bacteria and acts as a positive regulator of inflammasome assembly by promoting the release of inflammasome ligands from bacteria (By similarity). Acts by promoting lysis of pathogen-containing vacuoles, releasing pathogens into the cytosol (By similarity). Following pathogen release in the cytosol, promotes recruitment of proteins that mediate bacterial cytolysis: this liberates ligands that are detected by inflammasomes, such as lipopolysaccharide (LPS) that activates the non-canonical CASP4/CASP11 inflammasome or double- stranded DNA

(dsDNA) that activates the AIM2 inflammasome (By similarity). As an activator of NLRP3 inflammasome assembly: promotes selective NLRP3 inflammasome assembly in response to microbial and soluble, but not crystalline, agents (PubMed:[22461501](#)). Independently of its GTPase activity, acts as an inhibitor of various viruses infectivity, such as HIV-1, Zika and influenza A viruses, by inhibiting FURIN-mediated maturation of viral envelope proteins (PubMed:[26996307](#), PubMed:[31091448](#)).

Cellular Location

Cytoplasmic vesicle membrane {ECO:0000250 | UniProtKB:Q8CFB4}; Lipid-anchor, GPI-like-anchor. Golgi apparatus membrane; Lipid-anchor. Cytoplasm

Tissue Location

Expressed in peripheral blood monocytes (at protein level).

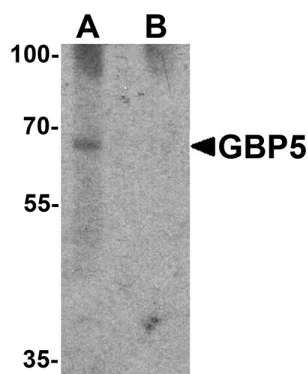
Background

GBP5 Antibody: The guanylate-binding proteins (GBPs) are a family of interferon-induced GTP-binding proteins function in innate immunity against microbial and viral pathogens. In humans, there are seven GBPs from hGBP1 to hGBP7. Human GBP1 and GBP2 have been shown to exhibit antiviral activity as well as being able to regulate the inhibition of proliferation and invasion of endothelial cells in response to interferon (IFN). GBP5 promotes selective NALP3 inflammasome responses to pathogenic bacteria and soluble but not crystalline inflammasome priming agents.

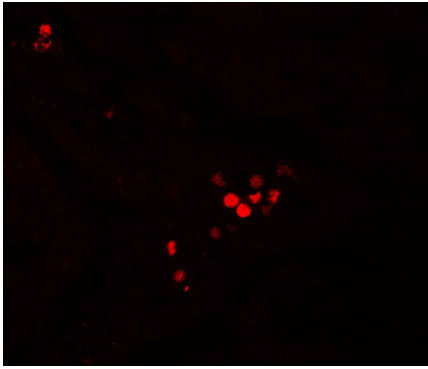
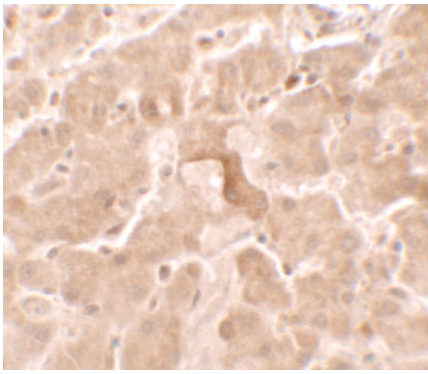
References

Vestal DJ. The guanylate-binding proteins (GBPs): proinflammatory cytokine-induced members of the dynamin superfamily with unique GTPase activity. *J. Interferon Cytokine Res.* 2005; 25:435-43.
Kresse A, Konermann C, Degrandi D, et al. Analyses of murine GBP homology clusters based on in silico, in vitro and in vivo studies. *BMC Genomics* 2008; 9:158.
Hammon M, Herrmann M, Bleiziffer O, et al. Role of guanylate binding protein-1 in vascular defects associated with chronic inflammatory diseases. *J. Cell Mol. Med.* 2011; 15:1582-92.
Shenoy AR, Wellington DA, Kumar P, et al. GBP5 promotes NLRP3 inflammasome assembly and immunity in mammals. *Science* 2012; 336:481-5.

Images



Immunohistochemistry of GBP5 in human liver tissue with GBP5 antibody at 2.5 µg/ml.



Immunofluorescence of GBP5 in human liver tissue with GBP5 antibody at 20 $\mu\text{g/ml}$.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.