abcam

ab313390

Anti-GBP5 antibody [EPR28367-83]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR28367-83
Purification technique	Affinity purification Protein A
Concentration	0.515 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Species	Mouse

Dilution info	1/500
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Species	Mouse
Dilution info	1/50

Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/2000
Notes	-

Species	Mouse
Dilution info	1/2000
Notes	-

Species	Rat
Dilution info	1/2000
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information GBP5

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). Antigenic tumor-specific truncated splice form.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	GBP5 or Guanylate Binding Protein 5 serves an important role in the immune response particularly within the innate immune system. GBP5 is a GTPase with a molecular mass of approximately 71 kDa. It expresses in a variety of tissues including immune cells like macrophages and lymphocytes. Its mechanical function involves binding to guanosine triphosphate (GTP) and converting it to guanosine diphosphate (GDP) a process which then triggers further downstream immune responses.
Biological function summary	GBP5 acts in immune defense against intracellular pathogens. It forms part of a multiprotein complex that can directly target and destroy bacterial membranes. GBP5 enhances the cell-autonomous immunity by promoting inflammasome activation which boosts cytokine production leading to a stronger inflammatory response. Its activity reflects in the ability of immune cells to restrict the growth of certain pathogens hence forming an important part of the host defense mechanism.
Pathways	GBP5 is part of the interferon-gamma signaling pathway. This pathway engages in regulating immune responses during infections particularly by modulating the activity of other immune-related proteins such as GBP1 and GBP2. GBP5 links to the NF-kB pathway as well where it helps regulation of inflammatory responses. The efficient functioning of these pathways ensures that immune responses remain robust and effective against pathogens.
Associated diseases and disorders	GBP5 is linked to tuberculosis and Crohn's disease. Its role in immune responses impacts how efficiently the body can deal with intracellular mycobacterial infections typical of tuberculosis. In Crohn's disease GBP5 associates with inflammatory processes that drive pathology. Through these conditions GBP5 often interfaces with proteins like NOD2 which shares a similar role in recognizing and responding to microbial components.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

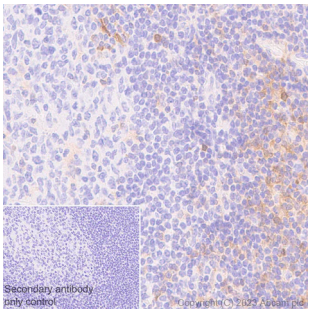
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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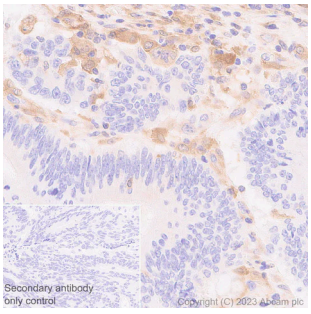
16 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling GBP5 with ab313390 at 1/4000 (0.127 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human tonsil. The section was incubated with ab313390 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins

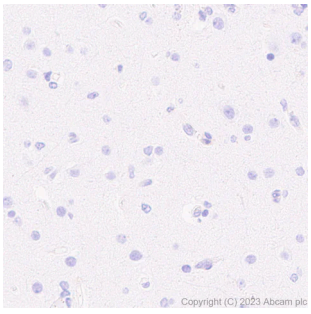
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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

Immunohistochemical analysis of paraffin-embedded Human colon carcinom tissue labeling GBP5 with ab313390 at 1/4000 (0.127 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on immune cells of human colon carcinoma. The section was incubated with ab313390 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins

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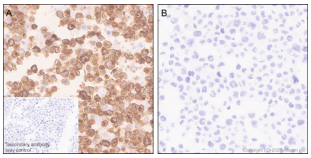


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

GBP5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cerebrum using rabbit Anti-GBP5 antibody

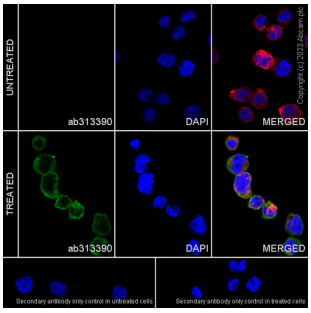
Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labeling GBP5 with ab313390 at 1/4000 (0.127 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Low expression: no staining on human cerebrum (PMID: 33608513). The section was incubated with ab313390 for 30 mins at room temperature. The immunostaining was performed

on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



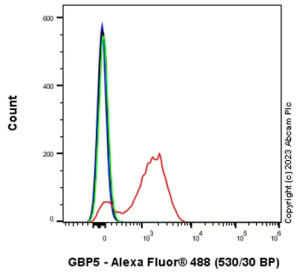
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

Immunohistochemical analysis of paraffin-embedded (A) THP-1 (human mon tissue labeling GBP5 with ab313390 at 1/2000 (0.254 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on (A) THP-1 treated with 1ug/ml LPS and IFN gamma for 24 hours cell pellet, no staining on (B) Untreated THP-1 cell pellet. The section was incubated with ab313390 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



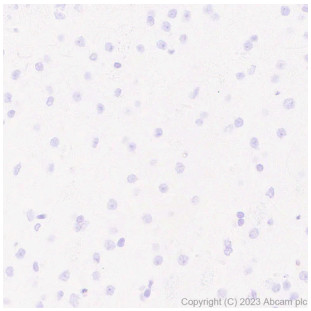
Immunocytochemistry/ Immunofluorescence - Anti-GBP5 antibody [EPR28367-83] (ab313390)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized THP-1 (human monocytic leukemia monocyte) cells labelling GBP5 with ab313390 at 1/50 (10.14 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/ml dilution (Green). Confocal image showing cytoplasmic staining in THP-1 cells treated with 1 µg/mL LPS (lipopolysaccharide) and 40 ng/mL IFN gamma for 24 hours, while showing no staining in untreated THP-1 cells.Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). is observed. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/ml dilution.



Flow Cytometry (Intracellular) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

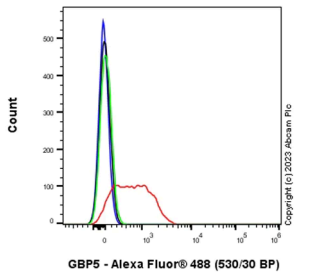
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized THP-1 (human monocytic leukemia monocyte) treated with 1µg/mL LPS for 24h and then 40ng/mL IFN gamma for 24h (Red) / untreated THP-1 (Green) cells labelling GBP5 with ab313390 at 1/500 dilution (0.1 ug)/Red and Green (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

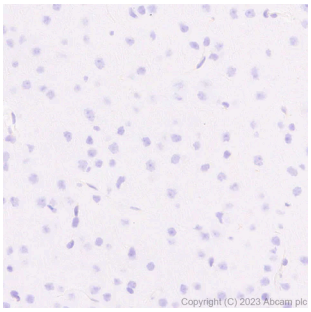
GBP5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat cerebrum using rabbit Anti-GBP5 antibody

Immunohistochemical analysis of paraffin-embedded Rat cerebrum tissue labeling GBP5 with ab313390 at 1/2000 (0.254 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Low expression: no staining on rat cerebrum. The section was incubated with ab313390 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Flow Cytometry (Intracellular) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

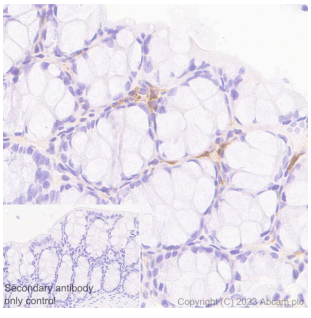
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized J774A.1 (mouse reticulum cell sarcoma monocyte/macrophage) treated with 1µg/mL LPS for 24h and then 40ng/mL IFN gamma for 24h (Red) / untreated J774A.1 (Green) cells labelling GBP5 with ab313390 at 1/500 dilution (0.1 ug)/Red and Green (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

GBP5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse cerebrum using rabbit Anti-GBP5 antibody

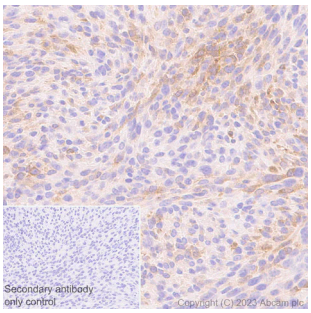
Immunohistochemical analysis of paraffin-embedded Mouse cerebrum tissue labeling GBP5 with ab313390 at 1/2000 (0.254 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Low expression: no staining on mouse cerebrum. The section was incubated with ab313390 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

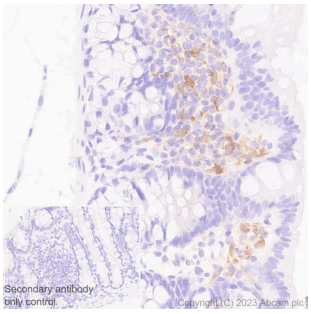
Immunohistochemical analysis of paraffin-embedded Mouse colon tissue labeling GBP5 with ab313390 at 1/2000 (0.254 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on immune cells of mouse colon. The section was incubated with ab313390 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800

(Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



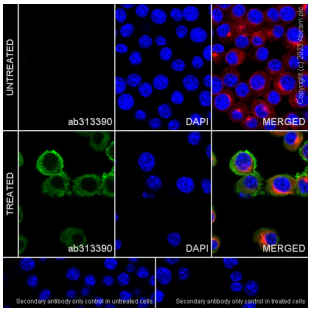
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

Immunohistochemical analysis of paraffin-embedded Mouse glioblastoma tissue labeling GBP5 with ab313390 at 1/2000 (0.254 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on mouse glioblastoma. The section was incubated with ab313390 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



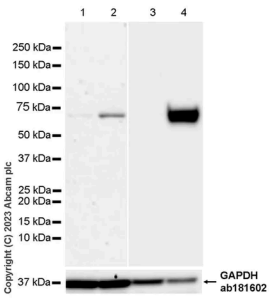
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GBP5 antibody [EPR28367-83] (ab313390)

Immunohistochemical analysis of paraffin-embedded Rat colon tissue labeling GBP5 with ab313390 at 1/2000 (0.254 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on immune cells of rat colon. The section was incubated with ab313390 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



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Western blot - Anti-GBP5 antibody [EPR28367-83] (ab313390)

Blocking and diluting buffer and concentration: 5% NFDM/TBST The cell induction condition was referenced from literature(PMID:22461501). In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution. Exposure time: Lane1-2: 180 seconds, lane3-4: 15 seconds
All lanes:
Western blot - Anti-GBP5 antibody [EPR28367-83] (ab313390) at 1/1000 dilution

Lane 1:
Untreated HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HeLa treated with /ml IFN alpha for 16 hours whole cell lysate at 20 µg

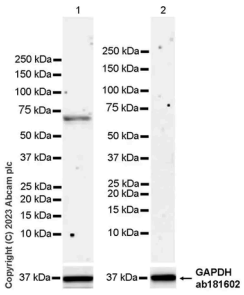
Lane 3:
Untreated THP-1 (human monocytic leukemia monocyte) whole cell lysate at 20 µg

Lane 4:
THP-1 treated with /ml LPS and IFN gamma for 24 hours whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 66 kDa



Western blot - Anti-GBP5 antibody [EPR28367-83] (ab313390)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Low expression: brain(PMID: 33608513). In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution. Exposure time: 180 seconds
All lanes:
Western blot - Anti-GBP5 antibody [EPR28367-83] (ab313390) at 1/1000 dilution

Lane 1:
Human colon tissue lysate at 20 µg

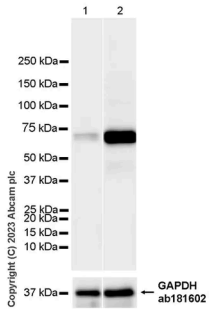
Lane 2:
Human brain tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 66 kDa

Exposure time: 180s



Western blot - Anti-GBP5 antibody [EPR28367-83] (ab313390)

GBP5 Western blot staining using rabbit Anti-GBP5 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST The cell induction condition was referenced from literature(PMID:22461501). In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution. Exposure time: 15 seconds
All lanes:
Western blot - Anti-GBP5 antibody [EPR28367-83] (ab313390) at 1/1000 dilution

Lane 1:
Untreated J774A.1 (Mouse reticum cell sarcoma monocyte macrophage) whole cell lysate at 20 µg

Lane 2:
J774A.1 treated with /ml LPS and IFN gamma for 24 hours, was then added for an additional 300ng/ml BFA for last 20 hours whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 66 kDa

Exposure time: 15s

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