abcam

ab109490

Anti-APG5L/ATG5 antibody [EPR4797]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: 50% Tissue culture supernatant, 40% Glycerol (glycerin, glycerine), 9.85% Tris glycine, 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR4797
Purity	Tissue culture supernatant

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Species	Mouse
Dilution info	1/100 - 1/250

Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/250
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information ATG5

Function

Involved in autophagic vesicle formation. Conjugation with ATG12, through a ubiquitin-like conjugating system involving ATG7 as an E1-like activating enzyme and ATG10 as an E2-like conjugating enzyme, is essential for its function. The ATG12-ATG5 conjugate acts as an E3-like enzyme which is required for lipidation of ATG8 family proteins and their association to the vesicle membranes. Involved in mitochondrial quality control after oxidative damage, and in subsequent cellular longevity. Plays a critical role in multiple aspects of lymphocyte development and is essential for both B and T lymphocyte survival and proliferation. Required for optimal processing and presentation of antigens for MHC II. Involved in the maintenance of axon morphology and membrane structures, as well as in normal adipocyte differentiation. Promotes primary ciliogenesis through removal of OFD1 from centriolar satellites and degradation of IFT20 via the autophagic pathway. As part of the ATG8 conjugation system with ATG12 and ATG16L1, required for recruitment of LRRK2 to stressed lysosomes and induction of LRRK2 kinase activity in response to lysosomal stress (By similarity). May play an important role in the apoptotic process, possibly within the modified cytoskeleton. Its expression is a relatively late event in the apoptotic process, occurring downstream of caspase activity. Plays a crucial role in IFN-gamma-induced autophagic cell death by interacting with FADD. (Microbial infection) May act as a proviral factor. In association with ATG12, negatively regulates the innate antiviral immune response by impairing the type I IFN production pathway upon vesicular stomatitis virus (VSV) infection (PubMed:17709747). Required for the translation of incoming

hepatitis C virus (HCV) RNA and, thereby, for initiation of HCV replication, but not required once infection is established (PubMed:19666601).

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	APG5L commonly known as ATG5 or ATG5 protein plays a significant role in autophagy. This molecular component has a molecular weight of approximately 32 kDa. ATG5 is expressed in multiple tissue types with a higher expression profile in immune-related cells. The protein is essential for the formation of the autophagosome as it conjugates with ATG12 to form a complex that is critical for autophagosome membrane elongation.

Biological function summary	ATG5 plays an important part in the cellular process of autophagy affecting the degradation and recycling of cellular components. It is a part of a complex with ATG12 and ATG16L1 which facilitates the membrane building of the autophagosome. This protein is important for maintaining cellular homeostasis allowing the removal of damaged proteins and organelles and is involved in responses to stress and starvation.
Pathways	ATG5 is an important component in the autophagy pathway and is involved in cellular maintenance processes. This pathway is vital for the regulation of cell growth and metabolism. ATG5 works closely with other autophagy-related proteins such as LC3. The ATG5-ATG12 complex helps in the lipidation of LC3 which is critical for autophagosome maturation connecting its function to the mTOR signaling pathway that regulates many cellular processes.
Associated diseases and disorders	Disruption in ATG5 function is linked to neurodegenerative diseases and cancer. For instance dysregulation of autophagy due to ATG5 dysfunction may result in the progression of neurodegenerative disorders like Alzheimer's disease. Additionally in certain cancers altered autophagy can influence the survival of cancer cells. The interplay between ATG5 and other proteins like p53 and Bcl-2 is under investigation to understand its role in these diseases.

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

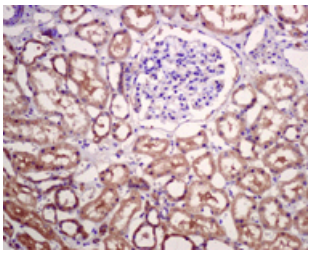
We do not recommend this combination. It is not covered by our product promise.

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.

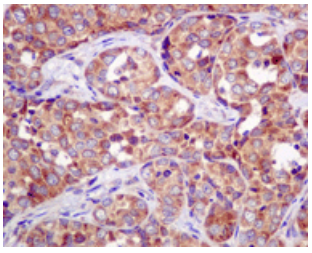
7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490)

APG5L/ATG5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-APG5L/ATG5 antibody

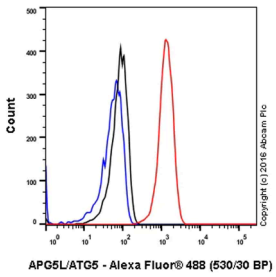
ab109490, at 1/100 dilution, staining APG5L/ATG5 in paraffin-embedded Human kidney by Immunohistochemistry.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490)

APG5L/ATG5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-APG5L/ATG5 antibody

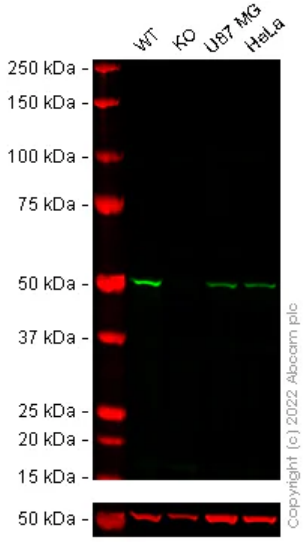
ab109490, at 1/100 dilution, staining APG5L/ATG5 in paraffin-embedded Human breast carcinoma by Immunohistochemistry.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490)

APG5L/ATG5 Flow Cytometry (Intracellular) staining using rabbit Anti-APG5L/ATG5 antibody

Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling APG5L/ATG5 with purified ab109490 at 1/250 dilution (10ug/mL) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluorr® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.



Western blot - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490)

APG5L/ATG5 Western blot staining using rabbit Anti-APG5L/ATG5 antibody

False colour image of Western blot: Anti-APG5L/ATG5 antibody [EPR4797] staining at 1/1000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (ab7291) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab109490 was shown to bind specifically to APG5L/ATG5. A band was observed at 50 kDa in wild-type THP-1 cell lysates with no signal observed at this size in ATG5 knockout cell line ab277835 (knockout cell lysate ab290722). To generate this image, wild-type and ATG5 knockout THP-1 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490) at 1/1000 dilution

Lane 1:
Wild-type THP-1 cell lysate at 20 µg

Lane 2:
Western blot - Human ATG5 knockout THP-1 cell lysate (ab290722)

Lane 3:
U-87 MG cell lysate at 20 µg

Lane 4:
HeLa cell lysate at 20 µg

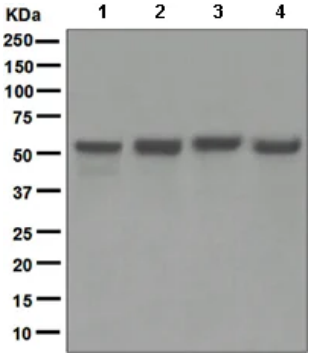
Secondary

Lanes 1 - 4:
Goat anti-Rabbit IgG H&L 800CW at 1/20000 dilution

Lanes 1 - 4:
Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 50 kDa



Western blot - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490)

All lanes:
Western blot - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490) at 1/1000 dilution

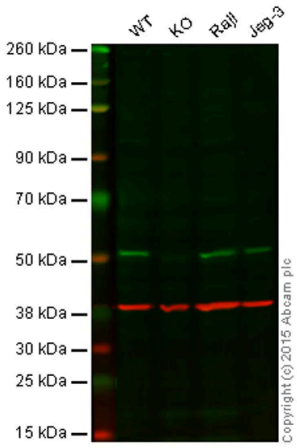
Lane 1:
THP1 cell lysate at 10 µg

Lane 2:
Raji cell lysate at 10 µg

Lane 3:
HeLa cell lysate at 10 µg

Lane 4:
HT1080 cell lysate at 10 µg

Predicted band size: 32 kDa

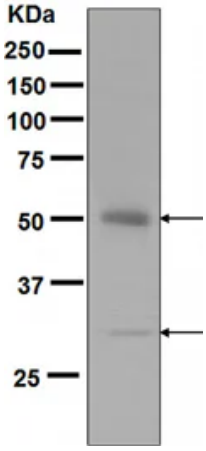


Western blot - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490)

APG5L/ATG5 Western blot staining using rabbit Anti-APG5L/ATG5 antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: APG5L/ATG5 knockout HAP1 cell lysate (20 µg)
Lane 3: Raji cell lysate (20 µg)
Lane 4: Jeg-3 cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab109490 observed at 52 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab109490 was shown to specifically react with APG5L/ATG5 when APG5L/ATG5 knockout samples were used. Wild-type and APG5L/ATG5 knockout samples were subjected to SDS-PAGE. ab109490 and ab8245 (loading control to GAPDH) were diluted 1/1000 and 1/2000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10 000 dilution for 1 h at room temperature before imaging.
All lanes:
Western blot - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490)

Predicted band size: 32 kDa



Western blot - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490)

Upper band shows APG5L/ATG5 conjugated to ATG12.
All lanes:
Western blot - Anti-APG5L/ATG5 antibody [EPR4797] (ab109490) at 1/1000 dilution

All lanes:
Human fetal kidney lysate at 10 µg

Predicted band size: 32 kDa

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