abcam

ab315009

Anti-ATG14 antibody [EPR26188-66]

Recombinant | RabMAb | KO Validated | 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	EPR26188-66
Purification technique	Affinity purification Protein A
Specificity	In western blot we detect a double banding pattern. Based on the location of the immunogen, this antibody recognises both ATG14L and ATG14S isoforms (PMID: 36371383).
Concentration	0.492 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000

Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

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

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat

Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information ATG14

Function	Required for both basal and inducible autophagy. Determines the localization of the autophagy-specific PI3-kinase complex PI3KC3-C1 (PubMed:18843052, PubMed:19050071). Plays a role in autophagosome formation and MAP1LC3/LC3 conjugation to phosphatidylethanolamine (PubMed:19270696, PubMed:20713597). Promotes BECN1 translocation from the trans-Golgi network to autophagosomes (PubMed:20713597). Enhances PIK3C3 activity in a BECN1-dependent manner. Essential for the autophagy-dependent phosphorylation of BECN1 (PubMed:23878393). Stimulates the phosphorylation of BECN1, but suppresses the phosphorylation PIK3C3 by AMPK (PubMed:23878393). Binds to STX17-SNAP29 binary t-SNARE complex on autophagosomes and primes it for VAMP8 interaction to promote autophagosome-endolysosome fusion (PubMed:25686604, PubMed:37632749). Modulates the hepatic lipid metabolism (By similarity).

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	ATG14 also known as Barkor is an important component involved in autophagy a cellular process for degrading and recycling cellular components. The protein has an approximate mass of 55 kDa. Researchers have observed ATG14 expression in various tissues with particularly high levels in the brain and liver. It plays a significant role in the formation and maturation of autophagosomes which are double-membrane structures that capture unnecessary cellular material for degradation.
Biological function summary	ATG14 serves as an important regulator within the autophagy machinery. It functions as a part of the Beclin-1-VPS34 complex which is essential for initiating the nucleation of the autophagosome membrane. This complex facilitates the localization of other autophagy-related proteins to the pre-autophagosomal structures thereby aiding in assembling the autophagosome. Through its ability to coordinate this assembly ATG14 influences both cellular homeostasis and response to stress.
Pathways	Researchers place ATG14 at a central point in the autophagy signaling pathway. It has connections to the PI3K signaling pathway where it interacts with Beclin-1 and VPS34 proteins. ATG14's function ties into the nutrient-sensing pathways that regulate cell growth and metabolism particularly under conditions of cellular stress or nutrient deprivation. This involvement reveals its relevance to cellular adaptive mechanisms which are important for organisms to maintain balance under varying environmental conditions.
Associated diseases and disorders	ATG14 associates with neurodegenerative diseases and certain types of cancer. Its role in autophagy suggests influence on the development and progression of neurodegenerative disorders like Alzheimer's disease where malfunctioning autophagy leads to the accumulation of defective proteins. Furthermore aberrations in autophagy regulated by ATG14 may contribute to cancer progression through interactions with oncogenes and tumor suppressors such as

Beclin-1. These associations underline ATG14's potential as a target for therapeutic strategies in treating related 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

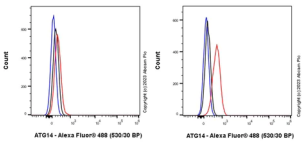
We do not recommend this combination. It is not covered by our product promise.

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.

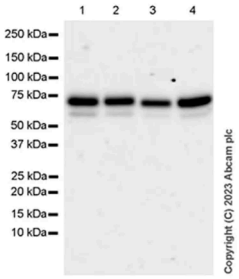
5 product images



Flow Cytometry (Intracellular) - Anti-ATG14 antibody [EPR26188-66] (ab315009)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized ATG14 KO HeLa (human ATG14 knockout cervical adenocarcinoma epithelial cell, Left) / Parental HeLa (Right) cells labelling ATG14 with ab315009 at 1/50 dilution (1 ug)/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).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Western blot - Anti-ATG14 antibody [EPR26188-66] (ab315009)

ATG14 Western blot staining using rabbit Anti-ATG14 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

ab315009 can detect both ATG14L and ATG14S isoforms (PMID: 36371383).

Lysates were freshly made and used for Western blotting immediately to minimize protein degradation.

All lanes:
Western blot - Anti-ATG14 antibody [EPR26188-66] (ab315009) at 1/1000 dilution

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

Lane 2:
293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 3:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

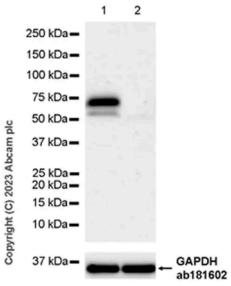
Lane 4:
PC-12 (rat adrenal gland pheochromocytoma cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 58 kDa, 65 kDa

Exposure time: 59s



Western blot - Anti-ATG14 antibody [EPR26188-66] (ab315009)

ATG14 Western blot staining using rabbit Anti-ATG14 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

ab315009 can detect both ATG14L and ATG14S isoforms (PMID: 36371383).

In Western blot, ab315009 was shown to bind specifically to ATG14. Target of interest was observed at 65 kDa and 58 KDa in wild-type HeLa cell lysates (lane 1) with no signal observed at this size in ATG14 knockout cell line (lane 2) (lane 2, knockout cell line ab264684 / knockout cell lysate ab258319).

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-ATG14 antibody [EPR26188-66] (ab315009) at 1/1000 dilution

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

Lane 2:
ATG14 knockout HeLa whole cell lysate at 20 µg

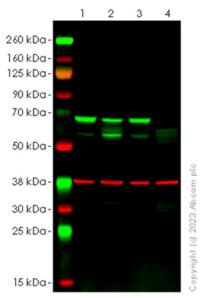
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 65 kDa, 58 kDa, 36 kDa

Exposure time: 81s



Western blot - Anti-ATG14 antibody [EPR26188-66] (ab315009)

ATG14 Western blot staining using rabbit Anti-ATG14 antibody

Blocking and diluting buffer and concentration: Intercept® (TBS) Blocking Buffer diluted with an equal volume of TBS.

ab315009 can detect both ATG14L and ATG14S isoforms (PMID: 36371383).

In lanes 2 and 4, the lysate was stored at -80☒ prior to Western Blotting. In lanes 1 and 3, lysate was freshly made and used for Western Blotting immediately to minimize protein degradation.

The samples were run on a Bis-Tris gel under reducing conditions.

Anti-ATG14 antibody (ab315009) staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody 6C5 (ab8245) loading control staining at 1/20000 dilution, shown in red.

All lanes:
Western blot - Anti-ATG14 antibody [EPR26188-66] (ab315009) at 1/1000 dilution

Lane 1:
Fresh HCT 116 (human colorectal carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
Frozen HCT 116 whole cell lysate at 20 µg

Lane 3:
Fresh HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 4:
Frozen HepG2 whole cell lysate at 20 µg

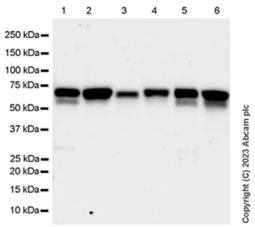
Secondary

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: 58 kDa, 65 kDa, 36 kDa



Western blot - Anti-ATG14 antibody [EPR26188-66] (ab315009)

ATG14 Western blot staining using rabbit Anti-ATG14 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

ab315009 can detect both ATG14L and ATG14S isoforms (PMID: 36371383).

All lanes:
Western blot - Anti-ATG14 antibody [EPR26188-66] (ab315009) at 1/1000 dilution

Lane 1:
Mouse brain tissue lysate at 20 µg

Lane 2:
Mouse testis tissue lysate at 20 µg

Lane 3:
Mouse pancreas tissue lysate at 20 µg

Lane 4:
Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate at 20 µg

Lane 5:
Rat brain tissue lysate at 20 µg

Lane 6:
Rat testis tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 58 kDa, 65 kDa

Exposure time: 81s

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