abcam

ab233796

Anti-ATG16L1 antibody [5H9A11]

Mouse Monoclonal ATG16L1 antibody. Suitable for Flow Cyt, WB and reacts with Human, Mouse, Rat, Transfected cell lysate - Human, Recombinant fragment - Human samples. Cited in 1 publication. Immunogen corresponding to Recombinant Fragment Protein within Human ATG16L1 aa 1-300.

Image updates are in progress. Products remain available and covered by the Abcam Product Promise. Learn more.

KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human ATG16L1 aa 1-300. The exact immunogen used to generate this antibody is proprietary information. Database link Q676U5
Clone number	5H9A11
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/200 - 1/400
Notes	-

Expected

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

Not recommended

Species	Transfected cell lysate - Human, Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

Species	Mouse
Dilution info	1/500 - 1/2000
Notes	-

Species	Rat
Dilution info	1/500 - 1/2000
Notes	-

Species	Transfected cell lysate - Human
Dilution info	1/500 - 1/2000
Notes	-

Species	Recombinant fragment - Human
Dilution info	1/500 - 1/2000
Notes	-

Target data

See full target information ATG16L1

Function	Plays an essential role in both canonical and non-canonical autophagy: interacts with ATG12-ATG5 to mediate the lipidation to ATG8 family proteins (MAP1LC3A, MAP1LC3B, MAP1LC3C, GABARAPL1, GABARAPL2 and GABARAP) (PubMed:23376921, PubMed:23392225, PubMed:24553140, PubMed:24954904, PubMed:27273576, PubMed:29317426, PubMed:30778222, PubMed:33909989). Acts as a molecular hub, coordinating autophagy pathways via distinct domains that support either canonical or non-canonical signaling (PubMed:29317426, PubMed:30778222). During canonical autophagy, interacts with ATG12-ATG5 to mediate the conjugation of phosphatidylethanolamine (PE) to ATG8 proteins, to produce a membrane-bound activated form of ATG8 (PubMed:23376921, PubMed:23392225, PubMed:24553140, PubMed:24954904, PubMed:27273576). Thereby, controls the elongation of the nascent autophagosomal membrane (PubMed:23376921, PubMed:23392225, PubMed:24553140, PubMed:24954904, PubMed:27273576). As part of the ATG8 conjugation system with ATG5 and ATG12, required for recruitment of LRRK2 to stressed lysosomes and induction of LRRK2 kinase activity in response to lysosomal stress (By similarity). Also involved in non-canonical autophagy, a parallel pathway involving conjugation of ATG8 proteins to single membranes at endolysosomal compartments, probably by catalyzing conjugation of phosphatidylserine (PS) to ATG8 (PubMed:33909989). Non-canonical autophagy plays a key role in epithelial cells to limit lethal infection by influenza A (IAV) virus (By similarity). Regulates mitochondrial antiviral signaling (MAVS)-dependent type I interferon (IFN-I) production (PubMed:22749352, PubMed:25645662). Negatively regulates NOD1- and NOD2-driven inflammatory cytokine response (PubMed:24238340). Instead, promotes an autophagy-dependent antibacterial pathway together with NOD1 or NOD2 (PubMed:20637199). Plays a role in regulating morphology and function of Paneth cell (PubMed:18849966).

Storage

Shipped at conditions	Blue Ice
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

Supplementary info

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

Activity summary	ATG16L1 also known as Autophagy Related 16 Like 1 is a protein involved in the autophagy process. It functions as part of a complex that includes ATG12 and ATG5. The molecular weight of ATG16L1 is approximately 66 kDa. It is highly expressed in various tissues including the immune cells highlighting its involvement in essential cellular processes. The protein interacts with other autophagy-related proteins to facilitate the elongation and maturation of autophagosomes.
Biological function summary	ATG16L1 plays a role in mediating autophagy a vital cellular degradation process. It forms a complex with ATG5 and ATG12 necessary for the elongation of the autophagosome membrane. Apart from its role in autophagy ATG16L1 contributes to the regulation of innate immunity by influencing the secretion of inflammatory cytokines. Its presence is essential for maintaining cellular homeostasis and proper immune responses.
Pathways	ATG16L1 is important in pathways like autophagy and immunity. In the autophagy pathway it works alongside ATG5 and ATG12 to ensure the proper formation of autophagosomes which are structures that engulf and degrade unwanted cellular components. Furthermore in the immune response pathway it helps regulate inflammation by managing cytokine production and secretion showing interaction with proteins like NOD2.
Associated diseases and disorders	ATG16L1 has connections with inflammatory bowel diseases particularly Crohn's disease and various cancers. Mutations in ATG16L1 can lead to impaired autophagy contributing to the development of Crohn's disease. In cancer dysregulation of autophagy involving ATG16L1 may affect tumor progression and response to therapy. The protein associates with NOD2 in Crohn's disease demonstrating that changes in their interaction can influence disease susceptibility and severity.

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.

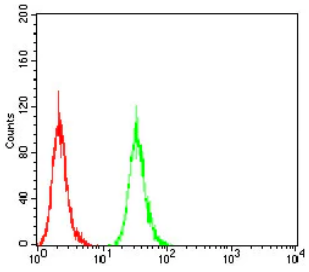
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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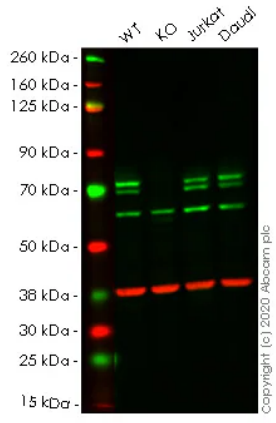
6 product images



Flow Cytometry - Anti-ATG16L1 antibody [5H9A11] (ab233796)

ATG16L1 Flow Cytometry staining using mouse Anti-ATG16L1 antibody

Flow cytometric analysis of HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling ATG16L1 with ab233796 at 1/200 dilution (green) compared with a negative control (red).



Western blot - Anti-ATG16L1 antibody [5H9A11] (ab233796)

ATG16L1 Western blot staining using mouse Anti-ATG16L1 antibody

Lanes 1-4: Merged signal (red and green). Green - ab233796 observed at 68 and 72 kDa. Red - loading control ab181602 observed at 37 kDa.
ab233796 Anti-ATG16L1 antibody [5H9A11] was shown to specifically react with ATG16L1 in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab261773 (knockout cell lysate ab256844) was used. Wild-type and ATG16L1 knockout samples were subjected to SDS-PAGE. ab233796 and Anti-GAPDH antibody[EPR16891] - Loading Control (ab181602) were incubated overnight at 4°C at 1 in 500 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) and Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-ATG16L1 antibody [5H9A11] (ab233796) at 1/500 dilution

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

Lane 2:
ATG16L1 knockout HeLa cell lysate at 20 µg

Lane 3:
Jurkat cell lysate at 20 µg

Lane 4:
Daudi cell lysate at 20 µg

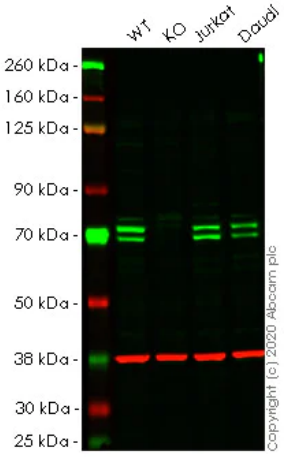
Secondary

All lanes:
Western blot - Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 68 kDa

Observed band size: 68 kDa



Western blot - Anti-ATG16L1 antibody [5H9A11] (ab233796)

ATG16L1 Western blot staining using mouse Anti-ATG16L1 antibody

Lanes 1- 4: Merged signal (red and green). Green - ab233796 observed at 68 kDa. Red - Anti-GAPDH antibody[EPR16891] - Loading Control (ab181602) observed at 37 kDa.
ab233796 was shown to react with ATG16L1 in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line ab265263 (knockout cell lysate ab256842) was used. Wild-type HeLa and ATG16L1 knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab233796 and Anti-GAPDH antibody[EPR16891] - Loading Control (ab181602) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye®800CW) preadsorbed (ab216772) and Goat Anti-Rabbit IgG H&L (IRDye®680RD) preadsorbed (ab216777) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-ATG16L1 antibody [5H9A11] (ab233796) at 1/1000 dilution

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

Lane 2:
ATG16L1 knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human ATG16L1 knockout HeLa cell line (ab265263)

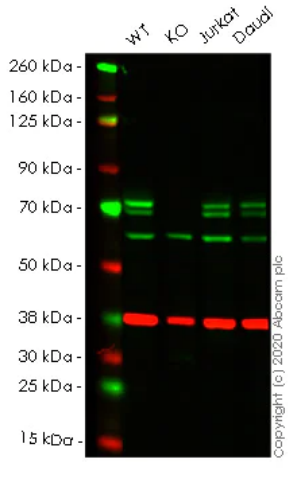
Lane 3:
Jurkat cell lysate at 20 µg

Lane 4:
Daudi cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 68 kDa

Observed band size: 68 kDa



Western blot - Anti-ATG16L1 antibody [5H9A11] (ab233796)

ATG16L1 Western blot staining using mouse Anti-ATG16L1 antibody

Lanes 1-4: Merged signal (red and green). Green - ab233796 observed at 68 and 72 kDa. Red - loading control ab181602 observed at 37 kDa.
ab233796 Anti-ATG16L1 antibody [5H9A11] was shown to specifically react with ATG16L1 in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab261772 (knockout cell lysate ab256843) was used. Wild-type and ATG16L1 knockout samples were subjected to SDS-PAGE. ab233796 and Anti-GAPDH antibody[EPR16891] - Loading Control (ab181602) were incubated overnight at 4°C at 1 in 500 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) and Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-ATG16L1 antibody [5H9A11] (ab233796) at 1/500 dilution

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

Lane 2:
ATG16L1 knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human ATG16L1 knockout HeLa cell line (ab261772)

Lane 3:
Jurkat cell lysate at 20 µg

Lane 4:
Daudi cell lysate at 20 µg

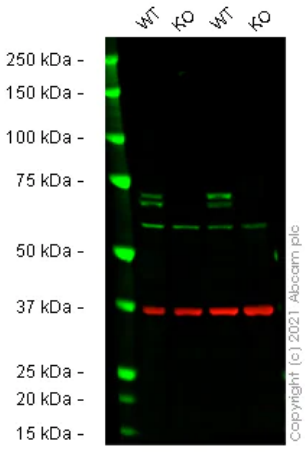
Secondary

All lanes:
Western blot - Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 68 kDa

Observed band size: 68 kDa, 72 kDa



Western blot - Anti-ATG16L1 antibody [5H9A11] (ab233796)

ATG16L1 Western blot staining using mouse Anti-ATG16L1 antibody

False colour image of Western blot: Anti-ATG16L1 antibody [5H9A11] staining at 1/500 dilution, shown in green; Rabbit Anti-GAPDH antibody [EPR16891] (ab181602) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab233796 was shown to bind specifically to ATG16L1. A band was observed at 68/70 kDa in wild-type THP-1 cell lysates with no signal observed at this size in ATG16L1 knockout cell line ab277834 (knockout cell lysate ab278184). To generate this image, wild-type and ATG16L1 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 fluorescent western blot (TBS-based) blocking solution 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-Mouse IgG H&L (IRDye® 800CW) preabsorbed

(ab216772) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed (ab216777) at 1/20000 dilution.
All lanes:
Western blot - Anti-ATG16L1 antibody [5H9A11] (ab233796) at 1/500 dilution

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

Lane 2:
ATG16L1 knockout THP-1 cell lysate at 20 µg

Lane 2:
Western blot - Human ATG16L1 knockout THP-1 cell line (ab277834)

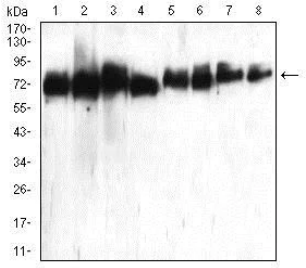
Lane 3:
Wild type HeLa cell lysate at 20 µg

Lane 4:
ATG16L1 knockout HeLa cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 68 kDa

Observed band size: 68 kDa, 70 kDa



Western blot - Anti-ATG16L1 antibody [5H9A11] (ab233796)

All lanes:
Western blot - Anti-ATG16L1 antibody [5H9A11] (ab233796) at 1/500 dilution

Lane 1:
HeLa (human epithelial cell line from cervix adenocarcinoma) cell lysate

Lane 2:
Raji (human Burkitt's lymphoma cell line) cell lysate

Lane 3:
PANC-1 (human pancreatic epithelial cancinoma cell line) cell lysate

Lane 4:
Jurkat (human T cell leukemia cell line from peripheral blood) cell lysate

Lane 5:
PC-12 (rat adrenal gland pheochromocytoma cell line) cell lysate

Lane 6:
HepG2 (human liver hepatocellular carcinoma cell line) cell lysate

Lane 7:
HEK-293 (human epithelial cell line from embryonic kidney) cell lysate

Lane 8:
NIH/3T3 (mouse embryo fibroblast cell line) cell lysate

Predicted band size: 68 kDa

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