abcam

ab256537

Anti-ULK1 (phospho S757) antibody [EPR22265-9] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR22265-9
Purification technique	Affinity purification Protein A
Concentration	1.033 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	-

Notes	-

Not recommended

Species	Synthetic peptide, Rat, Human
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide, Rat, Human
Dilution info	-
Notes	-

Dot

Tested

Species	Synthetic peptide
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide, Rat, Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Rat, Mouse, Human, Synthetic peptide
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Synthetic peptide, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information Ulk1 pS757

Function	Serine/threonine-protein kinase involved in autophagy in response to starvation (PubMed:10624947, PubMed:19258318, PubMed:21205641, PubMed:21258367, PubMed:21460634, PubMed:25040165, PubMed:25723488). Acts upstream of phosphatidylinositol 3-kinase PIK3C3 to regulate the formation of autophagophores, the precursors of autophagosomes (PubMed:10624947, PubMed:19258318, PubMed:21205641, PubMed:21258367, PubMed:21460634, PubMed:25040165). Part of regulatory feedback loops in autophagy: acts both as a downstream effector and negative regulator of mammalian target of rapamycin complex 1 (mTORC1) via interaction with RPTOR (PubMed:21205641, PubMed:21258367). Activated via phosphorylation by AMPK and also acts as a regulator of AMPK by mediating phosphorylation of AMPK subunits PRKAA1, PRKAB2 and PRKAG1, leading to negatively regulate AMPK activity (PubMed:21460634). May phosphorylate ATG13/KIAA0652 and RPTOR; however such data need additional evidences (PubMed:19258318). Plays a role early in neuronal differentiation and is required for granule cell axon formation (By similarity). Also phosphorylates SESN2 and SQSTM1 to regulate autophagy (PubMed:25040165, PubMed:25723488). Phosphorylates FLCN, promoting autophagy (By similarity). Phosphorylates AMBRA1 in response to autophagy induction, releasing AMBRA1 from the cytoskeletal docking site to induce autophagosome nucleation (By similarity). Phosphorylates ATG4B, leading to inhibit autophagy by decreasing both proteolytic activation and delipidation activities of ATG4B (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab256537 is the carrier-free version of ab229909.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	ULK1 also known as Unc-51-like kinase 1 is a serine/threonine-protein kinase with a molecular mass of approximately 112 kDa. ULK1 is expressed in many tissues including the brain heart and skeletal muscle and plays a significant mechanical role in initializing autophagy—a process vital for cellular recycling and homeostasis. The protein interacts with several autophagy-related proteins to facilitate its functions.
Biological function summary	This protein serves as an essential part of the ULK1 complex which includes ATG13 FIP200 and ATG101. This complex acts as an important regulator in the initiation stage of autophagy responding to cellular nutrient status and energy levels. ULK1 activity promotes the formation of the phagophore which is important for capturing and degrading cytoplasmic content.
Pathways	ULK1 plays a major role in autophagy and mTOR signaling pathways. The mTOR complex 1 (mTORC1) inhibits ULK1 activity under nutrient-rich conditions preventing unnecessary autophagy. When nutrients are scarce mTORC1 inhibition releases ULK1 enhancing autophagy initiation. ULK1 also interacts with AMPK an energy-sensing kinase adjusting cellular processes according to energy levels and promoting autophagy when necessary.
Associated diseases and disorders	Research links ULK1 to cancer and neurodegenerative diseases. Deregulation of autophagy pathways influenced by impaired ULK1 activity associates with cancer progression and tumor growth. Cancer cells often exploit autophagy to survive in nutrient-poor environments. In neurodegenerative diseases such as Alzheimer's ULK1-mediated autophagy activity can help clear protein aggregates. Understanding ULK1 interactions with proteins like AMPK in these contexts could offer advancements in therapeutic approaches.

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.

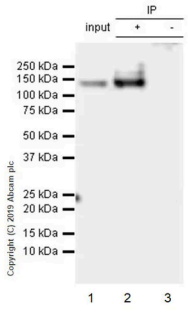
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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4 product images



Immunoprecipitation - Anti-ULK1 (phospho S757) antibody [EPR22265-9] - BSA and Azide free (ab256537)

This data was developed using ab229909, the same antibody clone in a different buffer formulation.

ULK1 (phospho S757) was immunoprecipitated from 0.35 mg MEF (mouse embryonic fibroblast (immortalized)) whole cell lysate with ab229909 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab229909 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution. Lysate were made freshly and used in IP test immediately to minimize protein degradation. Incubation time was 2h.
Lane 1: MEF (mouse embryonic fibroblast (immortalized)) whole cell lysate, 10µg.

Lane 2: ab229909 IP in MEF whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab229909 in MEF whole cell lysate.

Blocking/dilution buffer: 5% NFDM/TBST.

Exposure time: 3 mins.

All lanes:
Immunoprecipitation - Anti-ULK1 (phospho S757) antibody [EPR22265-9] (ab229909) at 1/1000 dilution

Lane 1:
MEF (mouse embryonic fibroblast (immortalized)) whole cell lysate at 10 µg

Lane 2:
ab229909 IP in MEF whole cell lysate

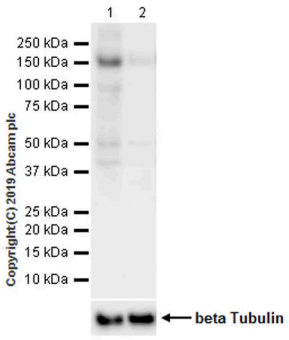
Lane 3:
Rabbit monoclonal IgG (ab172730) instead of ab229909 in MEF whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Observed band size: 150 kDa

Exposure time: 3min



Western blot - Anti-ULK1 (phospho S757) antibody [EPR22265-9] - BSA and Azide free (ab256537)

ULK1 (phospho S757) Western blot staining using rabbit Anti-ULK1 (phospho S757) antibody

This data was developed using ab229909, the same antibody clone in a different buffer formulation.

Phosphorylation level of S757 is reduced during starvation (PMID: 28835610, 21258367). This blot was developed using a higher sensitivity ECL substrate.
Blocking/Diluting buffer and concentration: 5% NFDM/TBST.

Exposure time: 59 seconds.

All lanes:
Western blot - Anti-ULK1 (phospho S757) antibody [EPR22265-9] (ab229909) at 1/1000 dilution

Lane 1:
Untreated MEF (mouse embryonic fibroblast (immortalized)), whole cell lysate at 20 µg

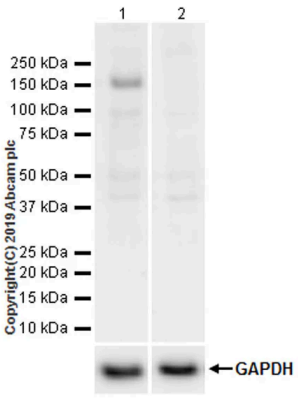
Lane 2:
MEF cells were cultured in amino acid and serum-free, glucose-containing starvation buffer (EBSS) for 16 hours, whole cell lysate at 20 µg

Secondary

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

Observed band size: 150 kDa, 50 kDa

Exposure time: 59s



Western blot - Anti-ULK1 (phospho S757) antibody [EPR22265-9] - BSA and Azide free (ab256537)

ULK1 (phospho S757) Western blot staining using rabbit Anti-ULK1 (phospho S757) antibody

This data was developed using ab229909, the same antibody clone in a different buffer formulation.

WB membrane in lane 2 was treated with alkaline phosphatase for 1h at 37°C. This blot was developed using a higher sensitivity ECL substrate.
Blocking/Dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 59 seconds.
All lanes:
Western blot - Anti-ULK1 (phospho S757) antibody [EPR22265-9] (ab229909) at 1/1000 dilution

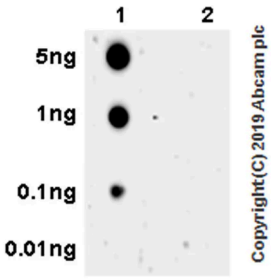
Lane 1:
MEF (mouse embryonic fibroblast (immortalized)), whole cell lysate at 20 µg

Lane 2:
MEF whole cell lysate (Phosphatase treated membrane) at 20 µg

Secondary

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

Observed band size: 150 kDa, 36 kDa



Dot Blot - Anti-ULK1 (phospho S757) antibody [EPR22265-9] - BSA and Azide free (ab256537)

ULK1 (phospho S757) Dot Blot staining using rabbit Anti-ULK1 (phospho S757) antibody

This data was developed using ab229909, the same antibody clone in a different buffer formulation.

Dot blot analysis using ab229909 at 1/1000 dilution, followed by a Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100,000 diltution.
Lane 1: ULK1 (phospho S757) peptide.

Lane 2: ULK1 non-phospho peptide.

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

Exposure time: 3 minutes.

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