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ULK1 Antibody

Rabbit mAb
Catalog # AP91332

Product Information

Application	WB, IHC, IF, ICC, IHF
Primary Accession	O75385
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	Serine/threonine-protein kinase ULK1; Autophagy-related protein 1 homolog; ATG1; Unc-51-like kinase 1; ULK1;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	112631

Additional Information

Dilution	WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human ULK1
Description	Act as a convergence point for multiple signals that control autophagy, and can bind to several autophagy-related (Atg) proteins, regulating phosphorylation states and protein trafficking. AMPK, activated during low nutrient conditions, directly phosphorylates ULK1 at multiple sites including Ser317, Ser555, and Ser777. Conversely, mTOR, which is a regulator of cell growth and an inhibitor of autophagy, phosphorylates ULK1 at Ser757 and disrupts the interaction between ULK1 and AMPK.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	ULK1 {ECO:0000303|PubMed:9693035, ECO:0000312|HGNC:HGNC:12558}
Function	Serine/threonine-protein kinase involved in autophagy in response to starvation (PubMed:18936157, PubMed:21460634, PubMed:21795849, PubMed:23524951, PubMed:25040165, PubMed:29487085, PubMed:31123703). Acts upstream of phosphatidylinositol 3-kinase PIK3C3 to regulate the formation of autophagophores, the precursors of autophagosomes (PubMed:18936157, PubMed:21460634, PubMed:21795849, PubMed:25040165, PubMed:39384743). 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:21795849). 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 evidence (PubMed:18936157). Plays a role early in neuronal differentiation and is required for granule cell axon formation (PubMed:11146101). Also phosphorylates SESN2 and SQSTM1 to regulate autophagy (PubMed:25040165, PubMed:37306101). Phosphorylates FLCN, promoting autophagy (PubMed:25126726). Phosphorylates AMBRA1 in response to autophagy induction, releasing AMBRA1 from the cytoskeletal docking site to induce autophagosome nucleation (PubMed:20921139). Phosphorylates ATG4B, leading to inhibit autophagy by decreasing both proteolytic activation and delipidation activities of ATG4B (PubMed:28821708).

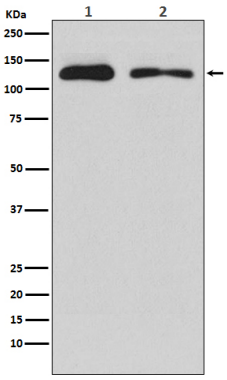
Cellular Location

Cytoplasm, cytosol. Preautophagosomal structure. Note=Under starvation conditions, is localized to puncate structures primarily representing the isolation membrane that sequesters a portion of the cytoplasm resulting in the formation of an autophagosome.

Tissue Location

Ubiquitously expressed. Detected in the following adult tissues: skeletal muscle, heart, pancreas, brain, placenta, liver, kidney, and lung

Images



Western blot analysis of ULK1 expression in (1) HEK293 cell lysate; (2) PC12 cell lysate.

Image not found : 202311/AP91332-IHC.jpg

Immunohistochemical analysis of paraffin-embedded human heart, using ULK1 Antibody.

Image not found : 202311/AP91332-IF.jpg

Immunofluorescent analysis of 293 cells, using ULK1 Antibody .

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