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# ULK1 Antibody

Rabbit mAb
Catalog # AP91332

## Product Information

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|---|---|
| **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

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|---|---|
| **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

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|---|---|
| **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).

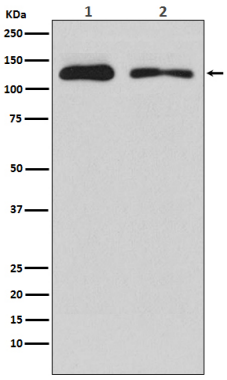
**Cellular Location**

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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