

APG1 (ULK1) Antibody (Center)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8104d

Specification

APG1 (ULK1) Antibody (Center) - Product Information

Application	WB,E
Primary Accession	075385
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	112631
Antigen Region	670-700

APG1 (ULK1) Antibody (Center) - Additional Information

Gene ID 8408

Other Names

Serine/threonine-protein kinase ULK1, Autophagy-related protein 1 homolog, ATG1, hATG1, Unc-51-like kinase 1, ULK1, KIAA0722

Target/Specificity

This APG1 (ULK1) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 670~700 amino acids from the Center region of human ULK1.

Dilution

WB~~1:1000

E~~Use at an assay dependent concentration.

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

APG1 (ULK1) Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

APG1 (ULK1) Antibody (Center) - 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 evidences (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 punctate structures primarily representing the isolation membrane that sequesters a portion of the cytoplasm resulting in the formation of an autophagosome.

Tissue Location

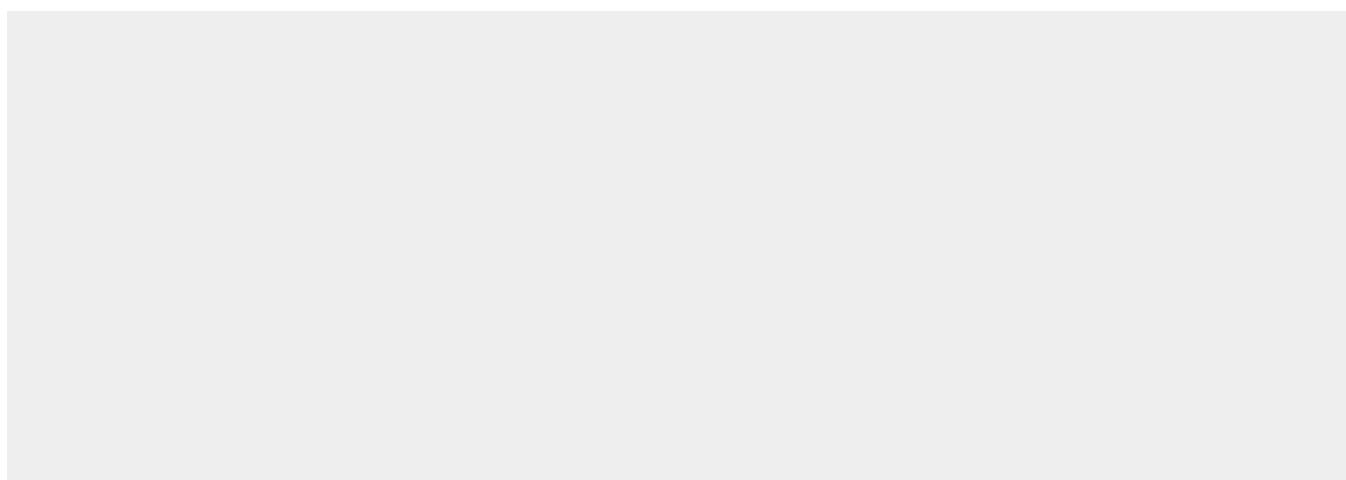
Ubiquitously expressed. Detected in the following adult tissues: skeletal muscle, heart, pancreas, brain, placenta, liver, kidney, and lung

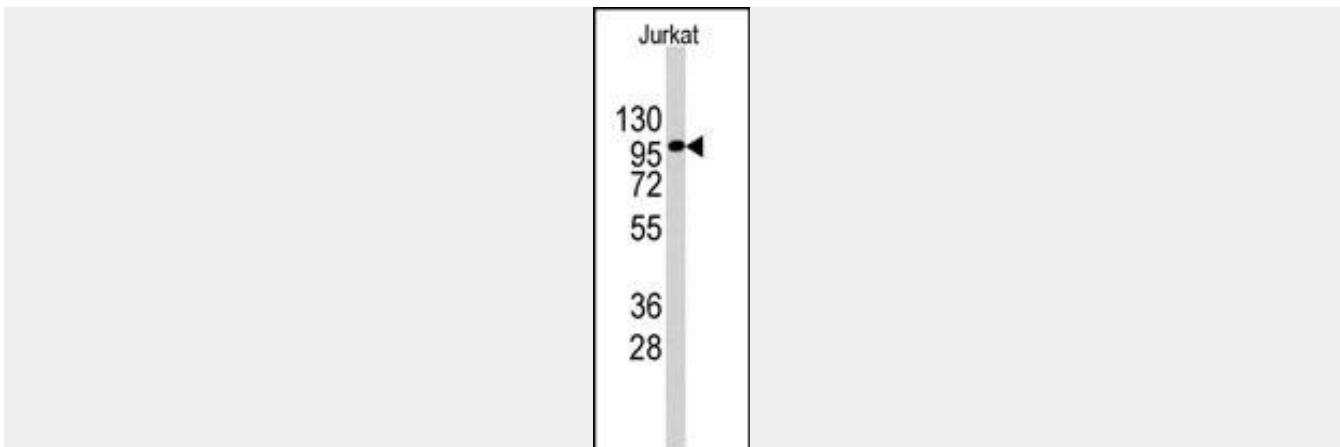
APG1 (ULK1) Antibody (Center) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

APG1 (ULK1) Antibody (Center) - Images





Western blot analysis of Autophagy APG1 (ULK1) Antibody (Center) (Cat.#AP8104d) in Jurkat cell line lysates (35ug/lane). ULK1 (arrow) was detected using the purified Pab (1:60 dilution).

APG1 (ULK1) Antibody (Center) - Background

Macroautophagy is the major inducible pathway for the general turnover of cytoplasmic constituents in eukaryotic cells, it is also responsible for the degradation of active cytoplasmic enzymes and organelles during nutrient starvation. Macroautophagy involves the formation of double-membrane bound autophagosomes which enclose the cytoplasmic constituent targeted for degradation in a membrane bound structure, which then fuse with the lysosome (or vacuole) releasing a single-membrane bound autophagic bodies which are then degraded within the lysosome (or vacuole). Two human homologs of the yeast autophagy-specific kinase exist: ULK1(APG1) and ULK2. APG1 plays a critical role in regulating key elements of the autophagy pathway. APG1 stimulates autophagy, leading to autophagy-dependent restriction of cell growth and ultimately cell apoptosis at high levels of activity, and is a negative regulator of mTOR signaling.

APG1 (ULK1) Antibody (Center) - References

Scott, R., et al., Current Biology 17: 1-11 (2007). Kuroyanagi, H., et al., Genomics 51(1):76-85 (1998).

APG1 (ULK1) Antibody (Center) - Citations

- [Low expression of ULK1 is associated with operable breast cancer progression and is an adverse prognostic marker of survival for patients.](#)