

Phospho-ULK1(S317) Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP3803a

Product Information

Application DB, E **Primary Accession** 075385 **Other Accession** NP 003556.1 Reactivity Human Host Rabbit Clonality Polyclonal Isotype Rabbit IgG **Clone Names** RB40755 **Calculated MW** 112631

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 ULK1 Antibody is generated from rabbits immunized with a KLH

conjugated synthetic phosphopeptide corresponding to amino acid residues

surrounding S317 of human ULK1.

Dilution DB~~1:500 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 Phospho-ULK1(S317) Antibody is for research use only and not for use in

diagnostic or therapeutic procedures.

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: <u>18936157</u>, PubMed: <u>21460634</u>, PubMed: <u>21795849</u>,

PubMed:<u>23524951</u>, PubMed:<u>25040165</u>, PubMed:<u>29487085</u>,

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: <u>25040165</u>). 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: <u>25126726</u>). 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

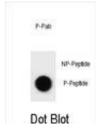
Background

Involved in autophagy. Required for autophagosome formation (By similarity). Target of the TOR kinase signaling pathway that regulates autophagy through the control of phosphorylation status of ATG13/KIAA0652 and ULK1, and the regulation of the ATG13-ULK1-RB1CC1 complex (By similarity). Phosphorylates ATG13/KIAA0652. Involved in axon growth (By similarity). Plays an essential role in neurite extension of cerebellar granule cells (By similarity).

References

Mercer, C.A., et al. Autophagy 5(5):649-662(2009) Ganley, I.G., et al. J. Biol. Chem. 284(18):12297-12305(2009) Jung, C.H., et al. Mol. Biol. Cell 20(7):1992-2003(2009) Hosokawa, N., et al. Mol. Biol. Cell 20(7):1981-1991(2009) Chan, E.Y. Sci Signal 2 (84), PE51 (2009):

Images



Dot blot analysis of ULK1 Antibody (Phospho S317) Phospho-specific Pab (Cat. #AP3803a) on nitrocellulose membrane. 50ng of Phospho-peptide or Non Phospho-peptide per dot were adsorbed. Antibody working concentrations are 0.6ug per ml.

Citations

- GZ17-6.02 Interacts With [MEK1/2 and B-RAF Inhibitors] to Kill Melanoma Cells
- GZ17-6.02 and Doxorubicin Interact to Kill Sarcoma Cells via Autophagy and Death Receptor Signaling
- Neratinib decreases pro-survival responses of [sorafenib + vorinostat] in pancreatic cancer
- The multi-kinase inhibitor lenvatinib interacts with the HDAC inhibitor entinostat to kill liver cancer cells
- Enhanced signaling via ERBB3/PI3K plays a compensatory survival role in pancreatic tumor cells exposed to [neratinib + valproate]
- Fingolimod Augments Monomethylfumarate Killing of GBM Cells
- (Curcumin+sildenafil) enhances the efficacy of 5FU and anti-PD1 therapies in vivo
- GZ17-6.02 initiates DNA damage causing autophagosome-dependent HDAC degradation resulting in enhanced anti-PD1 checkpoint inhibitory antibody efficacy

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