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ULK2 Antibody

Catalog # ASC11654

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q8IYT8
Other Accession	NP_055498, 217330557
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	112694
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ULK2 Antibody can be used for detection of ULK2 by Western blot at 1 □g/mL.

Additional Information

Gene ID	9706
Other Names	Serine/threonine-protein kinase ULK2, 2.7.11.1, Unc-51-like kinase 2, ULK2, KIAA0623
Target/Specificity	ULK2; At least two isoforms of ULK2 are known to exist; this antibody will detect both isoforms. ULK2 antibody is predicted to not cross-react with ULK1.
Reconstitution & Storage	ULK2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	ULK2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ULK2
Synonyms	KIAA0623
Function	Serine/threonine-protein kinase involved in autophagy in response to starvation. Acts upstream of phosphatidylinositol 3-kinase PIK3C3 to regulate the formation of autophagophores, the precursors of autophagosomes. Part of regulatory feedback loops in autophagy: acts both as a downstream effector and a negative regulator of mammalian target of rapamycin complex 1 (mTORC1) via interaction with RPTOR. Activated via phosphorylation by AMPK, also acts as a negative regulator of AMPK through phosphorylation of the AMPK subunits PRKAA1, PRKAB2 and PRKAG1. May phosphorylate ATG13/KIAA0652, FRS2, FRS3 and RPTOR; however such data need additional evidences. Not involved in ammonia-induced autophagy or in autophagic

	response of cerebellar granule neurons (CGN) to low potassium concentration. Plays a role early in neuronal differentiation and is required for granule cell axon formation: may govern axon formation via Ras-like GTPase signaling and through regulation of the Rab5-mediated endocytic pathways within developing axons.
Cellular Location	Cytoplasmic vesicle membrane; Peripheral membrane protein. Note=Localizes to pre-autophagosomal membrane

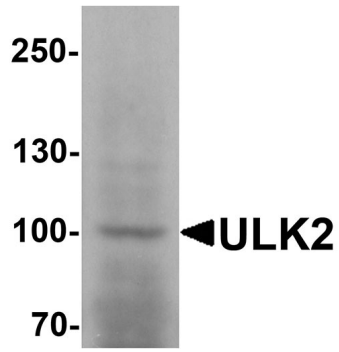
Background

ULK2 Antibody: ULK2, also known as ATG1B, is a key serine/threonine protein kinase probably acting at the most upstream step of autophagosome formation. Knockout of ULK2 results in a severe defect in the autophagy pathway. ULK2 is highly conserved among eukaryotes and shows high homology with its related protein ULK1. Both ULK1 and ULK2 form a complex with ATG13 and FIP200 that mediates TOR signaling and is essential for autophagy. Like ULK1, ULK2 is also thought to be involved in early neuronal growth and differentiation.

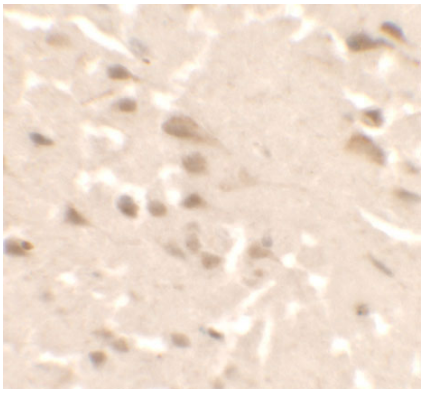
References

Suzuki K, Kubota Y, Sekito T, et al. Hierarchy of Atg proteins in pre-autophagosomal structure organization. Genes to Cells 2007; 12:209–18.
Lee EJ and Tournier C. The requirement of uncoordinated 51-like kinase 1 (ULK1) and ULK2 in the regulation of autophagy. Autophagy 2011; 7:689-95.
Jung CH, Jun CB, Ro SH, et al. ULK-ATG13-FIP200 complexes mediate mTOR signaling to the autophagy machinery. Mol. Biol. Cell 2009; 20:1992-2003.
Zhou X, Babu JR, da Silva S, et al.Unc-51-like kinase 1/2-mediated endocytic processes regulate filopodia extension and branching of sensory axons. Proc. Natl. Acad. Sci. USA 2007; 104:5842-7.

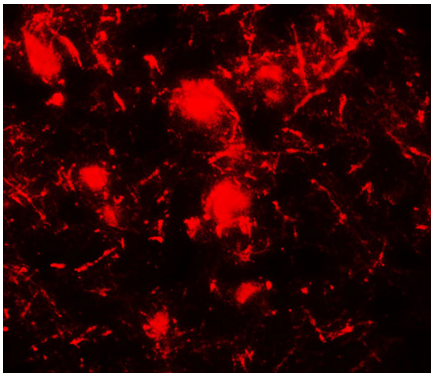
Images



Western blot analysis of ULK2 in human brain tissue lysate with ULK2 antibody at 1 µg/mL.



Immunohistochemistry of ULK2 in human brain tissue with ULK2 antibody at 2.5 µg/ml.



Immunofluorescence of ULK2 in human brain tissue with ULK2 antibody at 20 µg/ml.