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ATG13 Antibody

Catalog # ASC11145

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	O75143
Other Accession	NP_001136145, 218082953
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	56572
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ATG13 antibody can be used for detection of ATG13 by Western blot at 1 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	9776
Other Names	Autophagy-related protein 13, ATG13, KIAA0652
Target/Specificity	ATG13;
Reconstitution & Storage	ATG13 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	ATG13 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ATG13
Synonyms	KIAA0652
Function	Autophagy factor required for autophagosome formation and mitophagy. Target of the TOR kinase signaling pathway that regulates autophagy through the control of the phosphorylation status of ATG13 and ULK1, and the regulation of the ATG13-ULK1-RB1CC1 complex. Through its regulation of ULK1 activity, plays a role in the regulation of the kinase activity of mTORC1 and cell proliferation.
Cellular Location	Cytoplasm, cytosol. Preautophagosomal structure. Note=Under starvation

conditions, is localized to puncate structures primarily representing the isolation membrane; the isolation membrane sequesters a portion of the cytoplasm resulting in autophagosome formation

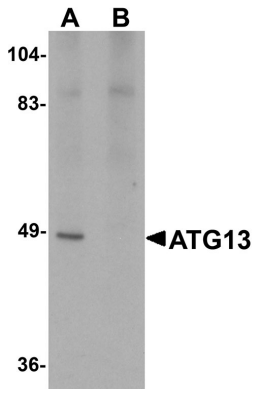
Background

ATG13 Antibody: Autophagy, the process of bulk degradation of cellular proteins through an autophagosomic-lysosomal pathway is important for normal growth control and may be defective in tumor cells. It is involved in the preservation of cellular nutrients under starvation conditions as well as the normal turnover of cytosolic components. This process is negatively regulated by TOR (Target of rapamycin) through phosphorylation of autophagy protein ATG1. ATG13 forms a complex with ULK1 and ULK2, the mammalian homologs of ATG1, and with FIP200. This complex is a target of TOR phosphorylation under normal conditions; inhibition of TOR by rapamycin or leucine deprivation leads to dephosphorylation of ATG13, ULK1 and ULK2, which then leads to autophagy. Knockdown of ATG13 inhibits autophagosome formation.

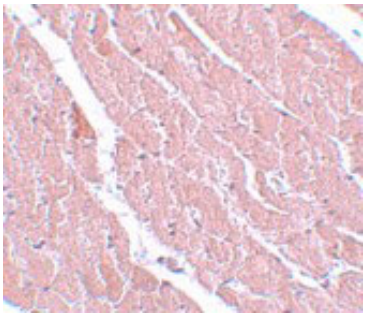
References

Gozuacik D and Kimchi A. Autophagy as a cell death and tumor suppressor mechanism. Oncogene 2004; 23:2891-906.
Kisen GO, Tessitore L, Costelli P, et al. Reduced autophagic activity in primary rat hepatocellular carcinoma and ascites hepatoma cells. Carcinogenesis 1993; 14:2501-5.
Kamada Y, Funakoshi T, Shintani T, et al. Tor-mediated induction of autophagy via Apg1 protein kinase complex. J. Cell. Biol. 2000; 150:1507-13.
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.

Images

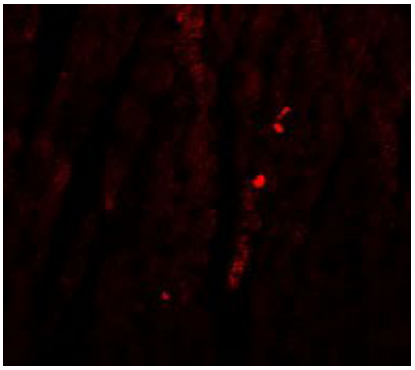


Western blot analysis of ATG13 in rat heart tissue lysate with ATG13 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.



Immunohistochemistry of ATG13 in mouse heart with ATG13 antibody at 5 µg/mL.

Immunofluorescence of ATG13 in Mouse Heart tissue with ATG13 antibody at 20 µg/mL.



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