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UVRAG Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1850B

Product Information

Application	IF, WB, IHC-P, E
Primary Accession	Q9P2Y5
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	78151
Antigen Region	666-699

Additional Information

Gene ID	7405
Other Names	UV radiation resistance-associated gene protein, p63, UVRAG
Target/Specificity	This UVRAG antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 666-699 amino acids from the C-terminal region of human UVRAG.
Dilution	IF~~1:10~50 WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	UVRAG Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	UVRAG
Function	Versatile protein that is involved in regulation of different cellular pathways implicated in membrane trafficking. Involved in regulation of the COPI-dependent retrograde transport from Golgi and the endoplasmic reticulum by associating with the NRZ complex; the function is dependent on its binding to phosphatidylinositol 3- phosphate (PtdIns(3)P)

	(PubMed:16799551, PubMed:18552835, PubMed:20643123, PubMed:24056303, PubMed:28306502). During autophagy acts as a regulatory subunit of the alternative PI3K complex II (PI3KC3-C2) that mediates formation of phosphatidylinositol 3-phosphate and is believed to be involved in maturation of autophagosomes and endocytosis. Activates lipid kinase activity of PIK3C3 (PubMed:16799551, PubMed:20643123, PubMed:24056303, PubMed:28306502). Involved in the regulation of degradative endocytic trafficking and cytokinesis, and in regulation of ATG9A transport from the Golgi to the autophagosome; the functions seems to implicate its association with PI3KC3-C2 (PubMed:16799551, PubMed:20643123, PubMed:24056303). Involved in maturation of autophagosomes and degradative endocytic trafficking independently of BECN1 but depending on its association with a class C Vps complex (possibly the HOPS complex); the association is also proposed to promote autophagosome recruitment and activation of Rab7 and endosome-endosome fusion events (PubMed:18552835, PubMed:28306502). Enhances class C Vps complex (possibly HOPS complex) association with a SNARE complex and promotes fusogenic SNARE complex formation during late endocytic membrane fusion (PubMed:24550300). In case of negative-strand RNA virus infection is required for efficient virus entry, promotes endocytic transport of virions and is implicated in a VAMP8- specific fusogenic SNARE complex assembly (PubMed:24550300).
Cellular Location	Late endosome. Lysosome. Cytoplasmic vesicle, autophagosome. Early endosome. Endoplasmic reticulum. Midbody. Chromosome, centromere. Note=Colocalizes with RAB9-positive compartments involved in retrograde transport from late endosomes to trans-Golgi network. Colocalization with early endosomes is only partial (PubMed:24056303). Recruited to autophagosome following interaction with RUBCNL/PACER (PubMed:28306502)
Tissue Location	Highly expressed in brain, lung, kidney and liver.

Background

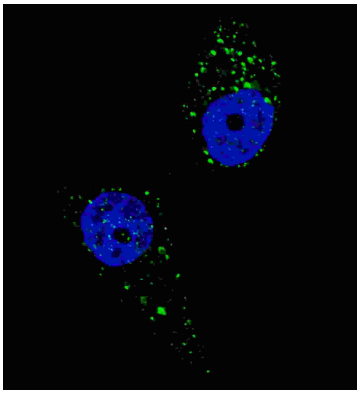
UVRAG complements the ultraviolet sensitivity of xeroderma pigmentosum group C cells and encodes a protein with a C2 domain. The protein activates the Beclin1-PI(3)KC3 complex, promoting autophagy and suppressing the proliferation and tumorigenicity of human colon cancer cells. Chromosomal aberrations involving this gene are associated with left-right axis malformation and mutations in this gene have been associated with colon cancer.

References

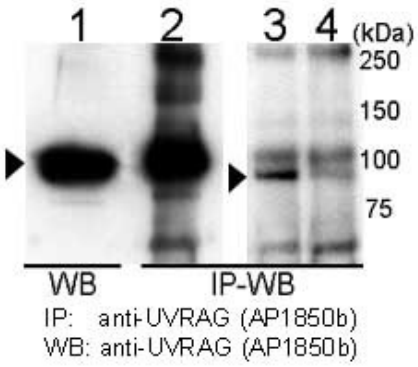
References for protein:
1.Liang,C., et al. Nat. Cell Biol. 8 (7), 688-699 (2006)
2.Ionov,Y., et al. Oncogene 23 (3), 639-645 (2004)
3.Goi,T., et al. Surg. Today 33 (9), 702-706 (2003)
4.Iida,A., et al. Hum. Genet. 106 (3), 277-287 (2000)
5.Perelman,B., et al. Genomics 41 (3), 397-405 (1997)
6.Bekri,S., et al. Cytogenet. Cell Genet. 79 (1-2), 125-131 (1997)
7.Teitz,T., et al. Gene 87 (2), 295-298 (1990)
References for U251 cell line:
1. Westermark B.; Pontén J.; Hugosson R. (1973).” Determinants for the establishment of permanent tissue culture lines from human gliomas”. Acta Pathol Microbiol Scand A. 81:791-805. [PMID: 4359449].
2. Pontén, J.,Westermark B. (1978).” Properties of Human Malignant Glioma Cells in Vitro”. Medical Biology 56: 184-193.[PMID: 359950].
3. Geng Y.;Kohli L.; Klocke B.J.; Roth K.A.(2010). “Chloroquine-induced autophagic vacuole accumulation and

cell death in glioma cells is p53 independent". Neuro Oncol. 12(5): 473–481.[PMID: 20406898].

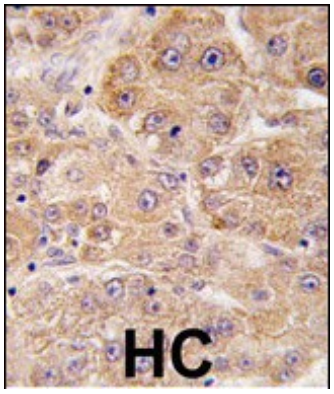
Images



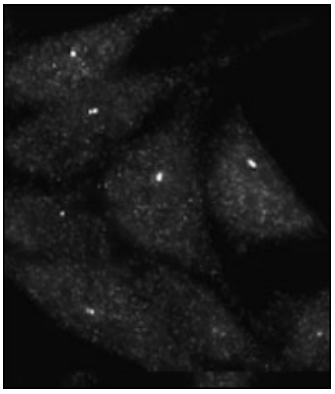
Fluorescent image of U251 cells stained with UVRAG (C-term) antibody. U251 cells were treated with Chloroquine (50 µM,16h), then fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.2%, 30 min). Cells were then incubated with AP1850b UVRAG (C-term) primary antibody (1:200, 2 h at room temperature). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:1000, 1h). Nuclei were counterstained with Hoechst 33342 (blue) (10 µg/ml, 5 min). UVRAG immunoreactivity is localized to autophagic vacuoles in the cytoplasm of U251 cells.



Immunoprecipitation and western blot analysis of anti-UVRAG Pab (Cat.#AP1850b) in 293T cells. UVRAG is immunoprecipitated (Lane 2) and detected in 293T cell transiently transfected with mouse UVRAG (Lane 1). Detection of endogenous UVRAG is shown in 293T cells (Lane 3) but is reduced by UVRAG siRNA transfection (Lane 4). Data courtesy of Dr. Hong-Gang Wang, Moffitt Cancer Center, Tampa, FL.



Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with hUVRAG (C-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Immunofluorescence staining of Autophagy UVRAG antibody (Cat# AP1850b) on Methanol-fixed HeLa cells. Data courtesy of Dr. Eeva-Liisa Eskelinen, University of Helsinki,Finland.

Citations

- A truncating mutation in the autophagy gene UVRAG drives inflammation and tumorigenesis in mice
- Oncogenic B-RAF signaling in melanoma impairs the therapeutic advantage of autophagy inhibition.
- Presenilin is necessary for efficient proteolysis through the autophagy-lysosome system in a γ-secretase-independent manner.
- The RUN domain of rubicon is important for hVps34 binding, lipid kinase inhibition, and autophagy suppression.
- Rubicon controls endosome maturation as a Rab7 effector.
- Biochemical isolation and characterization of the tubulovesicular LC3-positive autophagosomal compartment.
- Identification of Barkor as a mammalian autophagy-specific factor for Beclin 1 and class III phosphatidylinositol 3-kinase.
- Involvement of protective autophagy in TRAIL resistance of apoptosis-defective tumor cells.