10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

MUL1 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP20808c

Product Information

Application	WB, E
Primary Accession	Q969V5
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB49942
Calculated MW	39800

Additional Information

Gene ID	79594
Other Names	Mitochondrial ubiquitin ligase activator of NFKB 1, 632-, E3 SUMO-protein ligase MUL1, E3 ubiquitin-protein ligase MUL1, Growth inhibition and death E3 ligase, Mitochondrial-anchored protein ligase, MAPL, Putative NF-kappa-B-activating protein 266, RING finger protein 218, MUL1, C1orf166, GIDE, MAPL, MULAN, RNF218
Target/Specificity	This MUL1 antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 176-210 amino acids from the Central region of human MUL1.
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	MUL1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MUL1
Synonyms	C1orf166, GIDE, MAPL, MULAN, RNF218

Function	Exhibits weak E3 ubiquitin-protein ligase activity (PubMed: 18591963, PubMed:19407830, PubMed:22410793). E3 ubiquitin ligases accept ubiquitin from an E2 ubiquitin-conjugating enzyme in the form of a thioester and then directly transfer the ubiquitin to targeted substrates (PubMed:18591963, PubMed:19407830, PubMed:22410793). Can ubiquitinate AKT1 preferentially at 'Lys-284' involving 'Lys-48'-linked polyubiquitination and seems to be involved in regulation of Akt signaling by targeting phosphorylated Akt to proteasomal degradation (PubMed:22410793). Mediates polyubiquitination of cytoplasmic TP53 at 'Lys-24' which targets TP53 for proteasomal degradation, thus reducing TP53 levels in the cytoplasm and mitochondrion (PubMed:21597459). Proposed to preferentially act as a SUMO E3 ligase at physiological concentrations (PubMed:19407830). Plays a role in the control of mitochondrial morphology by promoting mitochondrial fragmentation, and influences mitochondrial localization (PubMed:18207745, PubMed:18213395, PubMed:19407830). Likely to promote mitochondrial fission through negatively regulating the mitochondrial fusion proteins MFN1 and MFN2, acting in a pathway that is parallel to the PRKN/PINK1 regulatory pathway (PubMed:24898855). May also be involved in the sumoylation of the membrane fission protein DNM1L (PubMed:18207745, PubMed:19407830). Inhibits cell growth (PubMed:18591963, PubMed:22410793). When overexpressed, activates JNK through MAP3K7/TAK1 and induces caspase-dependent apoptosis (PubMed:23399697). Involved in the modulation of innate immune defense against viruses by inhibiting RIGI-dependent antiviral response (PubMed:23399697). Can mediate RIGI sumoylation and disrupt its polyubiquitination (PubMed:23399697).
Cellular Location	Mitochondrion outer membrane; Multi-pass membrane protein. Peroxisome. Note=Transported in mitochondrion- derived vesicles from the mitochondrion to the peroxisome
Tissue Location	Widely expressed with highest levels in the heart, skeletal muscle, placenta, kidney and liver. Barely detectable in colon and thymus.

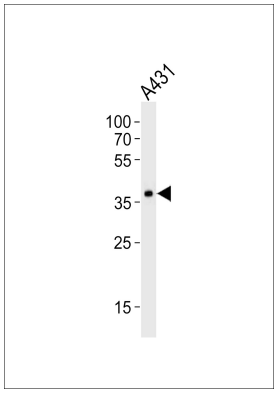
Background

Exhibits weak E3 ubiquitin-protein ligase activity. E3 ubiquitin ligases accept ubiquitin from an E2 ubiquitin-conjugating enzyme in the form of a thioester and then directly transfer the ubiquitin to targeted substrates. Can ubiquinate AKT1 preferentially at 'Lys-284' involving 'Lys-48'-linked polyubiquitination and seems to be involved in regulation of Akt signaling by targeting phosphorylated Akt to proteosomal degradation. Proposed to preferentially act as a SUMO E3 ligase at physiological concentrations. Plays a role in the control of mitochondrial morphology. Promotes mitochondrial fragmentation and influences mitochondrial localization. The function may implicate its abilty to sumoylate DNM1L. Inhibits cell growth. When overexpressed, activates JNK through MAP3K7/TAK1 and induces caspase-dependent apoptosis. Involved in the modulation of innate immune defense against viruses by inhibiting DDX58-dependent antiviral response. Can mediate DDX58 sumoylation and disrupt its polyubiquitination.

References

Zhang B.,et al.Cell Res. 18:900-910(2008).
Matsuda A.,et al.Oncogene 22:3307-3318(2003).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Bechtel S.,et al.BMC Genomics 8:399-399(2007).
Gregory S.G.,et al.Nature 441:315-321(2006).

Images



Western blot analysis of lysate from A431 cell line, using MUL1 Antibody (Center)(Cat. #AP20808c). AP20808c was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysate at 35ug.