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USP12 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2140b

Product Information

Application	WB, E
Primary Accession	O75317
Other Accession	P62069, P62068, A5WWB0, Q9D9M2, A4FUN7, A5D9H7, Q5M981, Q52KZ6, NP_872294
Reactivity	Human
Predicted	Mouse, Zebrafish, Bovine, Xenopus
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB4300
Calculated MW	42858
Antigen Region	315-345

Additional Information

Gene ID	219333
Other Names	Ubiquitin carboxyl-terminal hydrolase 12, Deubiquitinating enzyme 12, Ubiquitin thioesterase 12, Ubiquitin-hydrolyzing enzyme 1, Ubiquitin-specific-processing protease 12, USP12, UBH1, USP12L1
Target/Specificity	This USP12/USP46 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 315-345 amino acids from the C-terminal region of human USP12/USP46.
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 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	USP12 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	USP12

Synonyms	UBH1, USP12L1
Function	Deubiquitinating enzyme that plays various roles in the regulation of the immune response and inflammation (PubMed:19075014, PubMed:27373336). During TCR engagement and activation, translocates into the cytoplasm and deubiquitinates its substrates LAT and TRAT1 and prevents their lysosome-dependent degradation to stabilize the TCR signaling complex at the plasma membrane (PubMed:26811477). Plays an essential role in the selective LPS-induced macrophage response through the activation of NF-kappa-B pathway (PubMed:28063927). In addition, promotes that antiviral immune response through targeting DNA sensor IFI16 to inhibit its proteasome-dependent degradation (PubMed:37410794). Participates in the interferon signaling pathway and antiviral response independently of its deubiquitinase activity by maintaining nuclear phosphorylated STAT1 levels via inhibition of its CREBBP-mediated acetylation and subsequent dephosphorylation (PubMed:31899788). Plays an intrinsic role in promoting the differentiation, activation and proliferation of CD4(+) T-cell by activating the NF-kappa-B signaling pathway through deubiquitinating and stabilizing B-cell lymphoma/leukemia 10/BCL10 (By similarity). In myeloid-derived suppressor cells promotes the activation of the NF- kappa-B via deubiquitination and stabilization of RELA (By similarity). Regulates the 'Lys-63'-linked polyubiquitin chains of BAX and thereby modulates the mitochondrial apoptotic process (PubMed:36361894). Negative regulator of NOTCH signaling that specifically deubiquitinates non-activated NOTCH receptors to target them for lysosomal degradation; deubiquitination of NOTCH stimulates its transport form late endosomes to lysosomes (PubMed:22778262). Protects neurons against HTT/huntingtin-induced polyglutamine expansion-dependent neurodegeneration through regulation of autophagic flux (PubMed:30266909). This function is independent of deubiquitinase activity or of other components of the USP12-WDR20-WDR48 deubiquitinating complex (By similarity). In complex with WDR48, acts as a potential tumor suppressor by positively regulating PHLPP1 stability (PubMed:24145035).
Cellular Location	Nucleus. Cytoplasm. Cell membrane. Note=Translocates from the nucleus to the cytosol on TCR stimulation, while it translocates into the nucleus in IFN signaling. USP12/WDR20/WDR48 complex is localized mainly to the plasma membrane (PubMed:30466959).

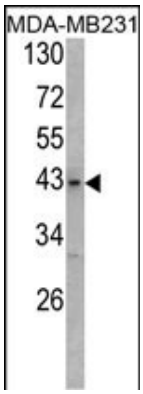
Background

Modification of target proteins by ubiquitin participates in a wide array of biological functions. Proteins destined for degradation or processing via the 26 S proteasome are coupled to multiple copies of ubiquitin. However, attachment of ubiquitin or ubiquitin-related molecules may also result in changes in subcellular distribution or modification of protein activity. An additional level of ubiquitin regulation, deubiquitination, is catalyzed by proteases called deubiquitinating enzymes, which fall into four distinct families. Ubiquitin C-terminal hydrolases, ubiquitin-specific processing proteases (USPs),1 OTU-domain ubiquitin-aldehyde-binding proteins, and Jab1/Pad1/MPN-domain-containing metallo-enzymes. Among these four families, USPs represent the most widespread and represented deubiquitinating enzymes across evolution. USPs tend to release ubiquitin from a conjugated protein. They display similar catalytic domains containing conserved Cys and His boxes but divergent N-terminal and occasionally C-terminal extensions, which are thought to function in substrate recognition, subcellular localization, and protein-protein interactions.

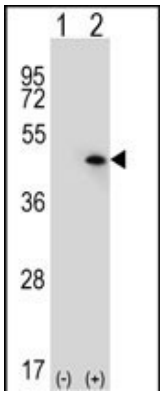
References

Hansen-Hagge, T.E., et al., Genomics 49(3):411-418 (1998).

Images



Western blot analysis of USP12/USP46 Antibody (C-term) (Cat. #AP2140b) in MDA-MB231 cell line lysates (35ug/lane). USP12/USP46 (arrow) was detected using the purified Pab.



Western blot analysis of USP12 (arrow) using rabbit polyclonal USP12 Antibody (L315) (Cat. #AP2140b). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the USP12 gene.