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USP2 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2131b

Product Information

Application	WB, E
Primary Accession	O75604
Other Accession	Q5U349, O88623, Q2KHV7
Reactivity	Human
Predicted	Bovine, Mouse, Rat, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	68072
Antigen Region	380-410

Additional Information

Gene ID	9099
Other Names	Ubiquitin carboxyl-terminal hydrolase 2, 41 kDa ubiquitin-specific protease, Deubiquitinating enzyme 2, Ubiquitin thioesterase 2, Ubiquitin-specific-processing protease 2, USP2, UBP41
Target/Specificity	This USP2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 380-410 amino acids from the C-terminal region of human USP2.
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	USP2 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	USP2
Synonyms	UBP41

Function	Hydrolase that deubiquitinates polyubiquitinated target proteins such as MDM2, MDM4 and CCND1 (PubMed:17290220, PubMed:19838211, PubMed:19917254). Isoform 1 and isoform 4 possess both ubiquitin-specific peptidase and isopeptidase activities (By similarity). Deubiquitinates MDM2 without reversing MDM2-mediated p53/TP53 ubiquitination and thus indirectly promotes p53/TP53 degradation and limits p53 activity (PubMed:17290220, PubMed:19838211). Has no deubiquitinase activity against p53/TP53 (PubMed:17290220). Prevents MDM2-mediated degradation of MDM4 (PubMed:17290220). Plays a role in the G1/S cell-cycle progression in normal and cancer cells (PubMed:19917254). Regulates the circadian clock by modulating its intrinsic circadian rhythm and its capacity to respond to external cues (By similarity). Associates with clock proteins and deubiquitinates core clock component PER1 but does not affect its overall stability (By similarity). Regulates the nucleocytoplasmic shuttling and nuclear retention of PER1 and its repressive role on the clock transcription factors CLOCK and BMAL1 (By similarity). Plays a role in the regulation of myogenic differentiation of embryonic muscle cells (By similarity).
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:O88623}. Cytoplasm, perinuclear region {ECO:0000250|UniProtKB:O88623} Note=Localizes in the spermatid head in late-elongating spermatids in the thin area between the outer acrosomal membrane and the plasma membrane. {ECO:0000250|UniProtKB:Q5U349}
Tissue Location	Expressed in mesangial cells of the kidney and in different types of glomerulonephritides (at protein level)

Background

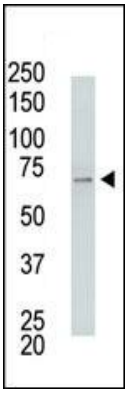
Modification of target proteins by ubiquitin participates in a wide array of biological functions. Proteins destined for degradation or processing via the 26 S proteasome are coupled to multiple copies of ubiquitin. However, attachment of ubiquitin or ubiquitin-related molecules may also result in changes 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.

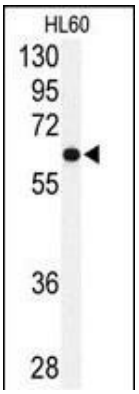
References

Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002).

Images

The anti-USP2 Antibody (C-term)(Cat.#AP2131b) is used in Western blot to detect USP2 in USP2-transfected HeLa cell lysates. Transfection data is kindly provided by Dr. B. Pierrat from the Novartis Institute for Biomedical Research (Basel, Switzerland).





Western blot analysis of anti-USP2 Antibody (C-term) (Cat.#AP2131b) in HL60 cell line lysates (35ug/lane).USP2(arrow) was detected using the purified Pab.

Citations

- Ubiquitination-deubiquitination balance dictates ligand-stimulated PTHR sorting.
- USP2a protein deubiquitinates and stabilizes the circadian protein CRY1 in response to inflammatory signals.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.