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USP5 Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AM8423b

Product Information

Application	WB, E
Primary Accession	P45974
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1,κ
Clone Names	1340CT704.170.140
Calculated MW	95786

Additional Information

Gene ID	8078
Other Names	Ubiquitin carboxyl-terminal hydrolase 5, Deubiquitinating enzyme 5, Isopeptidase T, Ubiquitin thioesterase 5, Ubiquitin-specific-processing protease 5, USP5, ISOT
Target/Specificity	This USP5 antibody is generated from a mouse immunized with a recombination protein from the human region of human USP5.
Dilution	WB~~1:2000 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, 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	USP5 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	USP5
Synonyms	ISOT
Function	Deubiquitinating enzyme that participates in a wide range of cellular processes by specifically cleaving isopeptide bonds between ubiquitin and substrate proteins or ubiquitin itself. Affects thereby important cellular

signaling pathways such as NF-kappa-B, Wnt/beta- catenin, and cytokine production by regulating ubiquitin-dependent protein degradation. Participates in the activation of the Wnt signaling pathway by promoting FOXM1 deubiquitination and stabilization that induces the recruitment of beta-catenin to Wnt target gene promoter (PubMed:26912724). Regulates the assembly and disassembly of heat-induced stress granules by mediating the hydrolysis of unanchored ubiquitin chains (PubMed:29567855). Promotes lipopolysaccharide-induced apoptosis and inflammatory response by stabilizing the TXNIP protein (PubMed:37534934). Affects T-cell biology by stabilizing the inhibitory receptor on T-cells PDC1 (PubMed:37208329). Acts as a negative regulator of autophagy by regulating ULK1 at both protein and mRNA levels (PubMed:37607937). Acts also as a negative regulator of type I interferon production by simultaneously removing both 'Lys-48'-linked unanchored and 'Lys-63'-linked anchored polyubiquitin chains on the transcription factor IRF3 (PubMed:39761299). Modulates the stability of DNA mismatch repair protein MLH1 and counteracts the effect of the ubiquitin ligase UBR4 (PubMed:39032648). Upon activation by insulin, it gets phosphorylated through mTORC1-mediated phosphorylation to enhance YTHDF1 stability by removing 'Lys-11'-linked polyubiquitination (PubMed:39900921). May also deubiquitinate other substrates such as the calcium channel CACNA1H (By similarity).

Cellular Location Cytoplasm. Cytoplasm, Stress granule. Nucleus

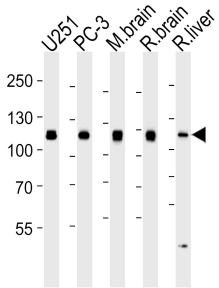
Background

Cleaves linear and branched multiubiquitin polymers with a marked preference for branched polymers. Involved in unanchored 'Lys-48'-linked polyubiquitin disassembly. Binds linear and 'Lys- 63'-linked polyubiquitin with a lower affinity. Knock-down of USP5 causes the accumulation of p53/TP53 and an increase in p53/TP53 transcriptional activity because the unanchored polyubiquitin that accumulates is able to compete with ubiquitinated p53/TP53 but not with MDM2 for proteasomal recognition.

References

Falquet L.,et al.FEBS Lett. 376:233-237(1995).
Ansari-Lari M.A.,et al.Genome Res. 6:314-326(1996).
Ansari-Lari M.A.,et al.Genome Res. 7:268-280(1997).
Tashayev V.L.,et al.Submitted (NOV-1995) to the EMBL/GenBank/DDBJ databases.
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.

Images



Western blot analysis of lysates from U251, PC-3 cell line, mouse brain, rat brain and liver tissue lysates (from left to right), using USP5 Antibody(Cat. #AM8423b). AM8423b was diluted at 1:1000 at each lane. A goat anti-mouse IgG H&L(HRP) at 1:3000 dilution was used as the secondary antibody. Lysates at 35µg per lane.