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USP10 Antibody

Rabbit mAb
Catalog # AP91544

Product Information

Application	WB, IHC, IF, ICC, IP, IHF
Primary Accession	Q14694
Reactivity	Human
Clonality	Monoclonal
Other Names	Deubiquitinating enzyme 10; UBPO; USP10;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	87134

Additional Information

Dilution	WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200 IP 1:50
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human USP10
Description	Hydrolase that can remove conjugated ubiquitin from target proteins such as p53/TP53, SNX3 and CFTR. Acts as an essential regulator of p53/TP53 stability: in unstressed cells, specifically deubiquitinates p53/TP53 in the cytoplasm, leading to counteract MDM2 action and stabilize p53/TP53.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	USP10 {ECO:0000303|PubMed:11439350, ECO:0000312|HGNC:HGNC:12608}
Function	Hydrolase that can remove conjugated ubiquitin from target proteins such as p53/TP53, RPS2/us5, RPS3/us3, RPS10/eS10, BECN1, SNX3 and CFTR (PubMed:11439350, PubMed:18632802, PubMed:31981475). Acts as an essential regulator of p53/TP53 stability: in unstressed cells, specifically deubiquitinates p53/TP53 in the cytoplasm, leading to counteract MDM2 action and stabilize p53/TP53 (PubMed:20096447). Following DNA damage, translocates to the nucleus and deubiquitinates p53/TP53, leading to regulate the p53/TP53-dependent DNA damage response (PubMed:20096447). Component of a regulatory loop that controls autophagy and p53/TP53 levels: mediates deubiquitination of BECN1, a key regulator of autophagy, leading to stabilize the PIK3C3/VPS34-containing complexes (PubMed:21962518). In turn, PIK3C3/VPS34-containing complexes regulate USP10 stability, suggesting the existence of a regulatory system by which PIK3C3/VPS34-containing complexes regulate p53/TP53 protein levels via USP10 and USP13

(PubMed:21962518). Does not deubiquitinate MDM2 (PubMed:20096447). Plays a key role in 40S ribosome subunit recycling when a ribosome has stalled during translation: acts both by inhibiting formation of stress granules, which store stalled translation pre-initiation complexes, and mediating deubiquitination of 40S ribosome subunits (PubMed:27022092, PubMed:31981475, PubMed:34348161, PubMed:34469731). Acts as a negative regulator of stress granules formation by lowering G3BP1 and G3BP2 valence, thereby preventing G3BP1 and G3BP2 ability to undergo liquid- liquid phase separation (LLPS) and assembly of stress granules (PubMed:11439350, PubMed:27022092, PubMed:32302570). Promotes 40S ribosome subunit recycling following ribosome dissociation in response to ribosome stalling by mediating deubiquitination of 40S ribosomal proteins RPS2/us5, RPS3/us3 and RPS10/eS10, thereby preventing their degradation by the proteasome (PubMed:31981475, PubMed:34348161, PubMed:34469731). Part of a ribosome quality control that takes place when ribosomes have stalled during translation initiation (iRQC): USP10 acts by removing monoubiquitination of RPS2/us5 and RPS3/us3, promoting 40S ribosomal subunit recycling (PubMed:34469731). Deubiquitinates CFTR in early endosomes, enhancing its endocytic recycling (PubMed:19398555). Involved in a TANK-dependent negative feedback response to attenuate NF-kappa-B activation via deubiquitinating IKBKG or TRAF6 in response to interleukin-1-beta (IL1B) stimulation or upon DNA damage (PubMed:25861989). Deubiquitinates TBX21 leading to its stabilization (PubMed:24845384). Plays a negative role in the RLR signaling pathway upon RNA virus infection by blocking the RIGI-mediated MAVS activation. Mechanistically, removes the unanchored 'Lys-63'-linked polyubiquitin chains of MAVS to inhibit its aggregation, essential for its activation (PubMed:37582970).

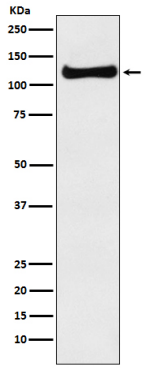
Cellular Location

Cytoplasm. Nucleus. Early endosome. Note=Cytoplasmic in normal conditions (PubMed:20096447). After DNA damage, translocates to the nucleus following phosphorylation by ATM (PubMed:20096447)

Tissue Location

Widely expressed..

Images



Western blot analysis of USP10 expression in A375 cell lysate.