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Store at -20C
#5553

USP10 Antibody

For Research Use Only. Not for Use in Diagnostic Procedures.

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|--------------------------------------|--------------------------------|-----------------------------------|-------------------------|----------------------------------|-------------------------------|--------------------------------|
| Applications: W, IP, IF-IC | Reactivity: H M R Mk | Sensitivity: Endogenous | MW (kDa): 110 | Source/Isotype: Rabbit | UniProt ID: #Q14694 | Entrez-Gene Id: 9100 |
|--------------------------------------|--------------------------------|-----------------------------------|-------------------------|----------------------------------|-------------------------------|--------------------------------|

Product Usage Information

Application

Western Blotting
Immunoprecipitation
Immunofluorescence (Immunocytochemistry)

Dilution

1:1000
1:50
1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

USP10 Antibody detects endogenous levels of total USP10 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu163 of human USP10 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Ubiquitinating enzymes (UBEs) catalyze protein ubiquitination, a reversible process countered by deubiquitinating enzyme (DUB) action (1,2). Five DUB subfamilies are recognized, including the USP, UCH, OTU, MJD, and JAMM enzymes. USP10 possesses amino acid sequences that match the consensus cysteine and histidine boxes representative of the USP family of deubiquitinating enzymes. At the posttranslational level, USP10 appears to be regulated through both protein-protein interactions and phosphorylation. Indeed, interaction of USP10 with Ras-GAP SH3 domain binding protein (G3BP) has been found to inhibit its ability to catalyze the disassembly of ubiquitin chains (3). Furthermore, ATM-mediated phosphorylation of USP10 at Thr42 and Ser337 was shown to promote USP10 stabilization and redistribution from the cytoplasm to the nucleus, where it functions in p53 deubiquitination, stabilization, and activation in response to genotoxic stress (4). Recently, it was shown that USP10 works in concert with USP13 and Vps34 complexes. USP10, along with USP13, appears to deubiquitinate Vps34 complexes to regulate the levels of this class III PI3K. Beclin-1, another component of these complexes, functions to regulate the stability of USP13, which can deubiquitinate and stabilize the levels of USP10. Therefore, Beclin-1, can indirectly regulate p53 stability by controlling the DUB activity of USP10 (5). USP10 also functions in the endosomal compartment, where it has been shown to deubiquitinate CFTR in order to enhance its endocytic recycling and cell surface expression (6,7).

Background References

1. Nijman, S.M. et al. (2005) *Cell* 123, 773-86.
2. Nalepa, G. et al. (2006) *Nat Rev Drug Discov* 5, 596-613.
3. Soncini, C. et al. (2001) *Oncogene* 20, 3869-79.
4. Yuan, J. et al. (2010) *Cell* 140, 384-96.
5. Liu, J. et al. (2011) *Cell* 147, 223-34.
6. Bomberger, J.M. et al. (2009) *J Biol Chem* 284, 18778-89.
7. Bomberger, J.M. et al. (2011) *Channels (Austin)* 4, 150-4.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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