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Ubiquitin Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1229A

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	P0CG48
Other Accession	P62975, P62972, P0CG69, P62976, P0CG71, P0CG63, Q63429, P0CG68, P0CG50, P0CH28, P0CG51, P0CG49, P0CG47, P0CG62, P0CG53, P05759, P62982, P62983, P62979, P15357, P79781, P62992, P62986, P63053, P62984, P0C273, P62987, P18101, P49632, P63048, P0CH09, P0CH08
Reactivity	Human
Predicted	Mouse, Rat, Rabbit, Hamster, Monkey, Pig, Chicken, Xenopus, Bovine, C.Elegans, Drosophila, Canine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	77039
Antigen Region	36-66

Additional Information

Gene ID	7316
Other Names	Polyubiquitin-C, Ubiquitin, UBC
Target/Specificity	This Ubiquitin antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 36-66 amino acids of human Ubiquitin.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:10~50 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	Ubiquitin Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	UBC

Function	[Ubiquitin]: Exists either covalently attached to another protein, or free (unanchored). When covalently bound, it is conjugated to target proteins via an isopeptide bond either as a monomer (monoubiquitin), a polymer linked via different Lys residues of the ubiquitin (polyubiquitin chains) or a linear polymer linked via the initiator Met of the ubiquitin (linear polyubiquitin chains). Polyubiquitin chains, when attached to a target protein, have different functions depending on the Lys residue of the ubiquitin that is linked: Lys-6-linked may be involved in DNA repair; Lys-11-linked is involved in ERAD (endoplasmic reticulum-associated degradation) and in cell- cycle regulation; Lys-29-linked is involved in proteotoxic stress response and cell cycle; Lys-33-linked is involved in kinase modification; Lys-48-linked is involved in protein degradation via the proteasome; Lys-63-linked is involved in endocytosis, DNA-damage responses as well as in signaling processes leading to activation of the transcription factor NF-kappa-B. Linear polymer chains formed via attachment by the initiator Met lead to cell signaling. Ubiquitin is usually conjugated to Lys residues of target proteins, however, in rare cases, conjugation to Cys or Ser residues has been observed. When polyubiquitin is free (unanchored-polyubiquitin), it also has distinct roles, such as in activation of protein kinases, and in signaling. During ubiquitination, the acceptor ubiquitin is positioned in the active site via direct interaction with the E2 ubiquitin-conjugating enzymes such as UBE2R2 (PubMed:38326650). As a monoubiquitin, its C- terminal glycine is recognized as a C-degron by Cul2-RING (CRL2) E3 ubiquitin-protein ligase complexes (PubMed:39548056).
Cellular Location	[Ubiquitin]: Cytoplasm. Nucleus. Mitochondrion outer membrane; Peripheral membrane protein

Background

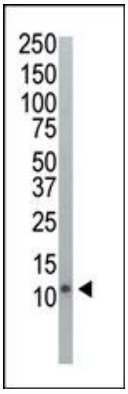
This gene encodes ubiquitin, one of the most conserved proteins known. Ubiquitin is required for ATP-dependent, nonlysosomal intracellular protein degradation of abnormal proteins and normal proteins with a rapid turnover. Ubiquitin is covalently bound to proteins to be degraded, and presumably labels these proteins for degradation. Ubiquitin also binds to histone H2A in actively transcribed regions but does not cause histone H2A degradation, suggesting that ubiquitin is also involved in regulation of gene expression. This gene consists of three direct repeats of the ubiquitin coding sequence with no spacer sequence. Consequently, the protein is expressed as a polyubiquitin precursor with a final amino acid after the last repeat. Aberrant form of this protein has been noticed in patients with Alzheimer's and Down syndrome.

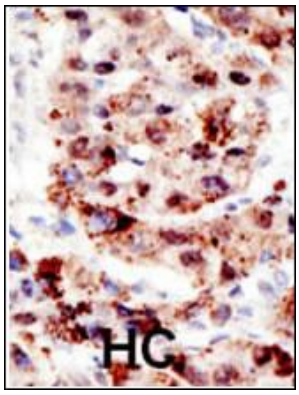
References

Chan, Y.L., et al., Biochem. Biophys. Res. Commun. 215(2):682-690 (1995).
Cook, W.J., et al., J. Mol. Biol. 236(2):601-609 (1994).
Hubbard, M.J., et al., Biochim. Biophys. Acta 1200(2):191-196 (1994).
Wajih, N., et al., Protein Seq. Data Anal. 5(1):31-32 (1992).
Cook, W.J., et al., J. Biol. Chem. 267(23):16467-16471 (1992).

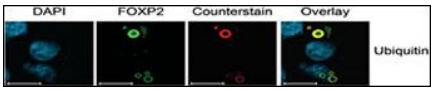
Images

Western blot analysis of anti-Ubiquitin Pab (Cat. #AP1229a) in HeLa cell lysate. Ubiquitin (Arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.





Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Characterization of FOXP2 Isoforms. FOXP2.10t was detected with an antibody to the N-terminal XpressTM tag or FOXP2 (green) and counterstained with antibodies to the aggresome marker ubiquitin (red). Nuclei are marked by DAPI staining (blue). Ubiquitin co-localizes with FOXP2.10t aggregates suggesting that these cellular bodies represent aggresomes. (Hum. Mol. Genet. 2006 Nov 01;15(21):3154-3167)

Citations

- Myocardin is required for maintenance of vascular and visceral smooth muscle homeostasis during postnatal development.
- Functional genetic analysis of mutations implicated in a human speech and language disorder.

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