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USP22 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2148b

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9UPT9
Other Accession	Q8CEG8, A6NNY8, Q5DU02, A6H8I0, P0C8Z3, Q6DCJ1, Q6GNI6
Reactivity	Human, Rat, Mouse
Predicted	Xenopus, Bovine, Zebrafish, Mouse, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	59961
Antigen Region	351-380

Additional Information

Gene ID	23326
Other Names	Ubiquitin carboxyl-terminal hydrolase 22, Deubiquitinating enzyme 22, Ubiquitin thioesterase 22, Ubiquitin-specific-processing protease 22, USP22, KIAA1063, USP3L
Target/Specificity	This USP22 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 351-380 amino acids from the C-terminal region of human USP22.
Dilution	WB~~1:1000 IHC-P~~1:100~500 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	USP22 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	USP22
Synonyms	KIAA1063, USP3L

Function	Deubiquitinase that plays a role in several cellular processes including transcriptional regulation, cell cycle progression or innate immunity. As part of the transcription regulatory histone acetylation (HAT) complex SAGA, catalyzes the deubiquitination of both histones H2A and H2B, thereby acting as a transcriptional coactivator (PubMed:18206972, PubMed:18206973, PubMed:18469533). Recruited to specific gene promoters by activators such as MYC, where it is required for transcription. Facilitates cell-cycle progression by stabilizing CCNB1 and antagonizing its proteasome-mediated degradation in a cell cycle-specific manner (PubMed:27030811). Modulates cell cycle progression and apoptosis also by antagonizing TP53 transcriptional activation through deacetylase SIRT1 stabilization (PubMed:22542455). Plays multiple roles in immunity and inflammation. Participates in antiviral response by deubiquitinating the importin KPNA2, leading to IRF3 nuclear translocation and subsequent type I interferon production (PubMed:32130408). Acts as a central regulator of type III IFN signaling by negatively regulating STING1 activation and ubiquitination (PubMed:35933402). Inhibits NLRP3 inflammasome activation by promoting NLRP3 degradation through ATG5-dependent autophagy (By similarity). Deubiquitinates CD274 to induce its stabilization and thereby participates in maintenance of immune tolerance to self (PubMed:31399419). Controls necroptotic cell death by regulating RIPK3 phosphorylation and ubiquitination (PubMed:33369872). During bacterial infection, promotes pro-inflammatory response by targeting TRAF6 and removing its 'Lys-48'-linked polyubiquitination (By similarity).
Cellular Location	Nucleus. Cytoplasm {ECO:0000250|UniProtKB:Q5DU02}
Tissue Location	Moderately expressed in various tissues including heart and skeletal muscle, and weakly expressed in lung and liver

Background

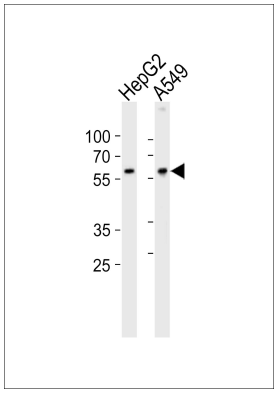
Modification of target proteins by ubiquitin participates in a wide array of biological functions. Proteins destined for degradation or processing via the 26 S proteasome are coupled to multiple copies of ubiquitin. However, attachment of ubiquitin or ubiquitin-related molecules may also result in changes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

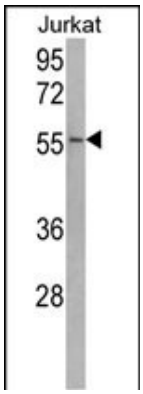
Kikuno, R., et al., DNA Res. 6(3):197-205 (1999).

Images

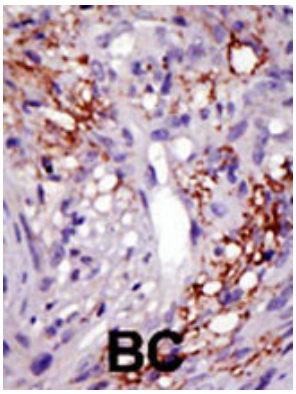
Western blot analysis of lysates from HepG2, A549 cell line (from left to right), using USP22 Antibody (C-term)(Cat. #AP2148B). AP2148B was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysates at



20ug per lane.



Western blot analysis of USP22 Antibody (C-term) (Cat. #AP2148b) in Jurkat cell line lysates (35ug/lane). USP22 (arrow) was detected using the purified Pab.



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

Citations

- Decreased H2B monoubiquitination and overexpression of ubiquitin-specific protease enzyme 22 in malignant colon carcinoma.
- lncRNA HULC promotes the growth of hepatocellular carcinoma cells via stabilizing COX-2 protein.

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