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USP13 Antibody (Center)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2141c

Specification

USP13 Antibody (Center) - Product Information

Application	**WB, IHC-P,E**
Primary Accession	Q92995
Other Accession	Q5BKP2, E1BMF7, NP_003931
Reactivity	**Human, Mouse**
Predicted	**Bovine**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**97327**
Antigen Region	**389-419**

USP13 Antibody (Center) - Additional Information

Gene ID 8975

Other Names
Ubiquitin carboxyl-terminal hydrolase 13, Deubiquitinating enzyme 13, Isopeptidase T-3, ISOT-3, Ubiquitin thioesterase 13, Ubiquitin-specific-processing protease 13, USP13, ISOT3

Target/Specificity
This USP13 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 389-419 amino acids from the Central region of human USP13.

Dilution
WB~~1:2000
IHC-P~~1:50~100

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
USP13 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

USP13 Antibody (Center) - Protein Information

Name USP13

Synonyms ISOT3

Function Deubiquitinase that mediates deubiquitination of target proteins such as BECN1, MITF, SKP2 and USP10 and is involved in various processes such as autophagy, endoplasmic reticulum-associated degradation (ERAD), cell cycle progression or DNA damage response (PubMed:21571647, PubMed:32772043, PubMed:33592542). 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. Alternatively, forms with NEDD4 a deubiquitination complex, which subsequently stabilizes VPS34 to promote autophagy (PubMed:32101753). Also deubiquitinates USP10, an essential regulator of p53/TP53 stability. In turn, PIK3C3/VPS34-containing complexes regulate USP13 stability, suggesting the existence of a regulatory system by which PIK3C3/VPS34-containing complexes regulate p53/TP53 protein levels via USP10 and USP13. Recruited by nuclear UFD1 and mediates deubiquitination of SKP2, thereby regulating endoplasmic reticulum-associated degradation (ERAD). Also regulates ERAD through the deubiquitination of UBL4A a component of the BAG6/BAT3 complex. Mediates stabilization of SIAH2 independently of deubiquitinase activity: binds ubiquitinated SIAH2 and acts by impairing SIAH2 autoubiquitination. Regulates the cell cycle progression by stabilizing cell cycle proteins such as SKP2 and AURKB (PubMed:32772043). In addition, plays an important role in maintaining genomic stability and in DNA replication checkpoint activation via regulation of RAP80 and TOPBP1 (PubMed:33592542). Deubiquitinates the multifunctional protein HMGB1 and subsequently drives its nucleocytoplasmic localization and its secretion (PubMed:36585612). Positively regulates type I and type II interferon signalings by deubiquitinating STAT1 but negatively regulates antiviral response by deubiquitinating STING1 (PubMed:23940278, PubMed:28534493).

Cellular Location
Cytoplasm.

Tissue Location
Highly expressed in ovary and testes.

USP13 Antibody (Center) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

USP13 Antibody (Center) - Images

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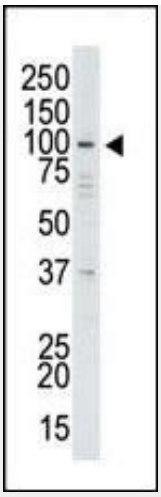
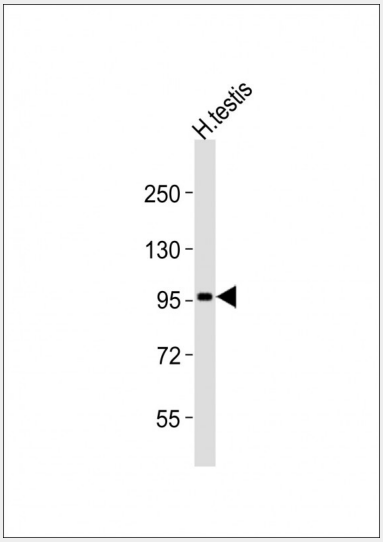


The anti-USP13 Pab (Cat. #AP2141c) is used in Western blot to detect USP13 in HeLa cell lysate.

Detection of USP13 in HeLa cells expressing exogenous USP13 by anti-USP13 Pab (Cat. #AP2141c). (Data provided by Amy Chen, Burnham Institute for Medical Research)



Anti-USP13 Antibody (V404)at 1:2000 dilution + human testis lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution Predicted band size : 97. 3 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

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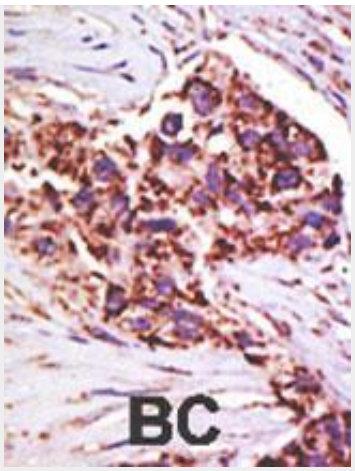

Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast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

USP13 Antibody (Center) - 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.

USP13 Antibody (Center) - References

Puente, X.S., et al., Nat. Rev. Genet. 4(7):544-558 (2003).
D'Andrea, A., et al., Crit. Rev. Biochem. Mol. Biol. 33(5):337-352 (1998).
Timms, K.M., et al., Gene 217 (1-2), 101-106 (1998).