10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

USP25 Antibody

Catalog # ASC11789

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q9UHP3
Other Accession	NP_037528, 50312666
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	122218
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	USP25 antibody can be used for detection of USP25 by Western blot at 1 - 2 g/ml. Antibody can also be used for Immunohistochemistry at 5 g/mL. For Immunoflorescence start at 20 g/mL.

Additional Information

Gene ID	29761
Other Names	Ubiquitin carboxyl-terminal hydrolase 25, 3.4.19.12, Deubiquitinating enzyme 25, USP on chromosome 21, Ubiquitin thioesterase 25, Ubiquitin-specific-processing protease 25, USP25, USP21
Target/Specificity	USP25; USP25 antibody is human and mouse reactive. Multiple isoforms of USP25 are known to exist.
Reconstitution & Storage	USP25 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	USP25 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	USP25
Synonyms	USP21
Function	Deubiquitinating enzyme that hydrolyzes ubiquitin moieties conjugated to substrates and thus, functions in various biological processes including inflammation and immune response (PubMed:29518389, PubMed:37683630). Modulates the Wnt/beta-catenin pathway by deubiquitinating and stabilizing tankyrases TNKS1 and TNKS2 (PubMed:28619731, PubMed:30926243, PubMed:38875478). Regulates KEAP1- NRF2 axis in the defense against oxidative assaults by deubiquitinating KEAP1 and protecting it from

degradation leading to degradation of the NRF2 transcription factor that is responsible for mounting an anti- oxidation gene expression program (PubMed:37339955). Positively regulates RNA virus-induced innate signaling by interacting with and deubiquitinating ERLIN1 and ERLIN2 (PubMed:37683630). In turn, restricts virus production by regulating cholesterol biosynthetic flux (PubMed:37683630). Acts as a negative regulator of interleukin-17- mediated signaling and inflammation through the removal of 'Lys-63'- linked ubiquitination of TRAF5 and TRAF6 (PubMed:23042150). Prevents the ubiquitination and degradation of TRAF3 to reduce the phosphorylation levels of JNK and P38, the secretion of IL-1B and to induce endotoxin tolerance (PubMed:30579117).

Cellular Location Cytoplasm

Tissue Location Isoform USP25a is found in most adult and fetal tissues; expression is moderately high in testis, pancreas, kidney, skeletal muscle, liver, lung, placenta, heart, but very low in peripheral blood, colon, small intestine, ovary, prostate, thymus and spleen. Expressed in the brain, with high levels in the cerebral cortex (PubMed:38875478). Isoform USP25b is found in all tissues except heart and skeletal muscle. Isoform USP25m is heart and skeletal muscle specific.

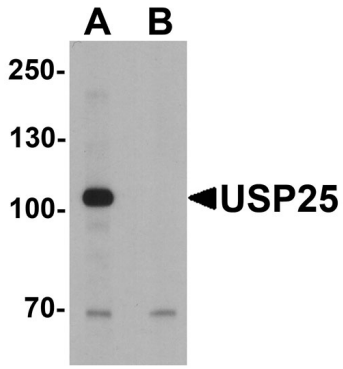
Background

USP25 (ubiquitin specific peptidase 25), also known as USP21, belongs to the peptidase C19 family and is a highly conserved 76-amino acid protein involved in regulation of intracellular protein breakdown, cell cycle regulation, and stress response (1). It contains one UBA-like domain and two UIM (ubiquitin-interacting motif) repeats. Due to alternative splicing events, USP25 is expressed as two short, ubiquitously expressed isoforms and one long, muscle-specific isoform (2). The long isoform of USP25 (USP25m) is upregulated in myogenesis and is implicated in regulation of muscular differentiation and function. USP25 is a deubiquitinating enzyme (DUB) that negatively regulates IL-17-triggered signaling (3,4).

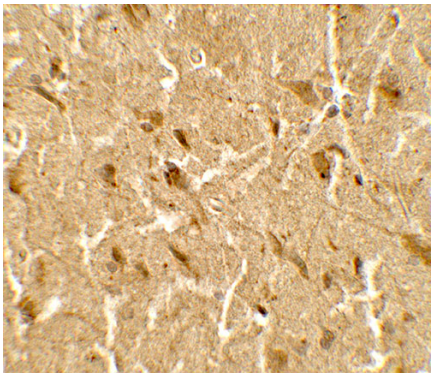
References

Valero R, Marfany G, Gonzalez-Angulo O, et al. USP25, a novel gene encoding a deubiquitinating enzyme, is located in the gene-poor region 21q11.2. Genomics 1999; 62:395-405.
Valero R, Bayes M, Francisca Sanchez-Font M, et al. Characterization of alternatively spliced products and tissue-specific isoforms of USP28 and USP25. Genome Biol. 2001; 2: RESEARCH0043.
Zhong B, Liu X, Wang X, et al. Negative regulation of IL-17-mediated signaling and inflammation by the ubiquitin-specific protease USP25. Nat. Immunol. 2012; 13:1110-7.
Zhong B, Liu X, Wang X, et al. Ubiquitin-specific protease 25 regulates TLR4-dependent innate immune responses through deubiquitination of the adaptor protein TRAF3. Sci. Signal. 2013; 6:ra35.

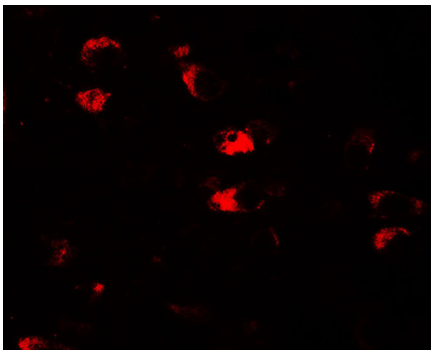
Images



Western blot analysis of USP25 in mouse brain tissue lysate with USP25 antibody at 1 µg/ml in (A) the absence and (B) the presence of blocking peptide.



Immunohistochemistry of USP25 in human brain tissue with USP25 antibody at 5 µg/mL.



Immunofluorescence of USP25 in human brain tissue with USP25 antibody at 20 µg/mL.

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