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KD-Validated Anti-Ubiquitin specific peptidase 7 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1087

Product Information

Application	WB, ICC
Primary Accession	Q93009
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB 2250
Calculated MW	128302
Gene Name	USP7
Aliases	USP7; Ubiquitin Specific Peptidase 7; HAUSP; Ubiquitin Specific Peptidase 7 (Herpes Virus-Associated); Ubiquitin-Specific-Processing Protease 7; Ubiquitin Carboxyl-Terminal Hydrolase 7; Deubiquitinating Enzyme 7; Ubiquitin Thioesterase 7; Ubiquitin Specific Protease 7 (Herpes Virus-Associated); Herpes Virus-Associated Ubiquitin-Specific Protease; Herpesvirus-Associated; Ubiquitin-Specific Protease; Chromosome 16p13.2 Deletion Syndrome; EC 3.4.19.12; C16DELp13.2; EC 3.1.2.15; DEL16P13.2; HAFOUS; TEF1
Immunogen	A synthesized peptide derived from human HAUSP / USP7

Additional Information

Gene ID	7874
Other Names	Ubiquitin carboxyl-terminal hydrolase 7, 3.4.19.12, Deubiquitinating enzyme 7, Herpesvirus-associated ubiquitin-specific protease, Ubiquitin thioesterase 7, Ubiquitin-specific-processing protease 7, USP7 {ECO:0000303|PubMed:12093161, ECO:0000312|HGNC:HGNC:12630}

Protein Information

Name	USP7 {ECO:0000303|PubMed:12093161, ECO:0000312|HGNC:HGNC:12630}
Function	Hydrolase that deubiquitinates target proteins such as ARMC5, FOXO4, DEPTOR, KAT5, p53/TP53, MDM2, ERCC6, DNMT1, UHRF1, PTEN, KMT2E/MLL5 and DAXX (PubMed:11923872, PubMed:15053880, PubMed:16964248, PubMed:18716620, PubMed:25283148, PubMed:25865756, PubMed:26678539, PubMed:28655758, PubMed:33544460, PubMed:35216969). Together with DAXX, prevents MDM2 self-ubiquitination and enhances the E3 ligase activity of MDM2 towards p53/TP53, thereby promoting p53/TP53 ubiquitination and proteasomal degradation (PubMed:15053880, PubMed:16845383, PubMed:18566590, PubMed:20153724). Deubiquitinates p53/TP53, preventing degradation of

p53/TP53, and enhances p53/TP53-dependent transcription regulation, cell growth repression and apoptosis (PubMed:25283148). Deubiquitinates p53/TP53 and MDM2 and strongly stabilizes p53/TP53 even in the presence of excess MDM2, and also induces p53/TP53-dependent cell growth repression and apoptosis (PubMed:11923872, PubMed:26786098). Deubiquitination of FOXO4 in presence of hydrogen peroxide is not dependent on p53/TP53 and inhibits FOXO4-induced transcriptional activity (PubMed:16964248). In association with DAXX, is involved in the deubiquitination and translocation of PTEN from the nucleus to the cytoplasm, both processes that are counteracted by PML (PubMed:18716620). Deubiquitinates KMT2E/MLL5 preventing KMT2E/MLL5 proteasomal-mediated degradation (PubMed:26678539). Involved in cell proliferation during early embryonic development. Involved in transcription-coupled nucleotide excision repair (TC-NER) in response to UV damage: recruited to DNA damage sites following interaction with KIAA1530/UVSSA and promotes deubiquitination of ERCC6, preventing UV- induced degradation of ERCC6 (PubMed:22466611, PubMed:22466612). Involved in maintenance of DNA methylation via its interaction with UHRF1 and DNMT1: acts by mediating deubiquitination of UHRF1 and DNMT1, preventing their degradation and promoting DNA methylation by DNMT1 (PubMed:21745816, PubMed:22411829). Deubiquitinates alkylation repair enzyme ALKBH3. OTUD4 recruits USP7 and USP9X to stabilize ALKBH3, thereby promoting the repair of alkylated DNA lesions (PubMed:25944111). Acts as a chromatin regulator via its association with the Polycomb group (PcG) multiprotein PRC1-like complex; may act by deubiquitinating components of the PRC1-like complex (PubMed:20601937). Able to mediate deubiquitination of histone H2B; it is however unsure whether this activity takes place in vivo (PubMed:20601937). Exhibits a preference towards 'Lys-48'-linked ubiquitin chains (PubMed:22689415). Increases regulatory T-cells (Treg) suppressive capacity by deubiquitinating and stabilizing the transcription factor FOXP3 which is crucial for Treg cell function (PubMed:23973222). Plays a role in the maintenance of the circadian clock periodicity via deubiquitination and stabilization of the CRY1 and CRY2 proteins (PubMed:27123980). Deubiquitinates REST, thereby stabilizing REST and promoting the maintenance of neural progenitor cells (PubMed:21258371). Deubiquitinates SIRT7, inhibiting SIRT7 histone deacetylase activity and regulating gluconeogenesis (PubMed:28655758). Involved in the regulation of WASH-dependent actin polymerization at the surface of endosomes and the regulation of endosomal protein recycling (PubMed:26365382). It maintains optimal WASH complex activity and precise F-actin levels via deubiquitination of TRIM27 and WASHC1 (PubMed:26365382). Mediates the deubiquitination of phosphorylated DEPTOR, promoting its stability and leading to decreased mTORC1 signaling (PubMed:35216969). Deubiquitinates H2AB1, H2BC4 and H2BC22 (By similarity).

Cellular Location

Nucleus. Cytoplasm Nucleus, PML body. Chromosome. Note=Present in a minority of ND10 nuclear bodies (PubMed:9034339). Association with ICP0/VMW110 at early times of infection leads to an increased proportion of USP7-containing ND10 (PubMed:9034339). Colocalizes with ATXN1 in the nucleus (PubMed:12093161). Colocalized with DAXX in speckled structures (PubMed:16845383). Colocalized with PML and PTEN in promyelocytic leukemia protein (PML) nuclear bodies (PubMed:18716620). Interaction with FAM170A promotes its nuclear translocation (By similarity) {ECO:0000250|UniProtKB:Q6A4J8, ECO:0000269|PubMed:12093161, ECO:0000269|PubMed:16845383, ECO:0000269|PubMed:18716620, ECO:0000269|PubMed:9034339}

Tissue Location

Expressed in neural progenitor cells (at protein level) (PubMed:21258371). Widely expressed. Overexpressed in prostate cancer.

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