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

HAUSP Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1348a

Specification

HAUSP Antibody - Product Information

Application	**WB, E**
Primary Accession	Q93009
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**IgG1**
Calculated MW	**128kDa KDa**

Description
USP7 or HAUSP is a ubiquitin specific protease or a deubiquitylating enzyme that cleaves ubiquitin from its substrates. Since ubiquitylation (polyubiquitination) is most commonly associated with the stability and degradation of cellular proteins, HAUSP acitivity generally stabilizes its substrate proteins. HAUSP is most popularly known as a direct antagonist of Mdm2, the E3 ubiquitin ligase for the tumor suppressor protein, p53.Normally, p53 levels are kept low in part due to Mdm2-mediated ubiquitylation and degradation of p53. Interestingly, in response to oncogenic insults, HAUSP can deubiquitinate p53 and protect p53 from Mdm2-mediated degradation, indicating that it may possess a tumor suppressor function for the immediate stabilization of p53 in response to stress. Another important role of HAUSP function involves the oncogenic stabilization of p53. Oncogenes such as Myc and E1A are thought to activate p53 through a p19 alternative reading frame (p19ARF, also called ARF)-dependent pathway, although some evidence suggests ARF is not essential in this process. An intriguing possibility is that HAUSP provides an alternative pathway for safeguarding the cell against oncogenic insults.

Immunogen
Purified recombinant fragment of human HAUSP expressed in E. Coli.

Formulation
Ascitic fluid containing 0.03% sodium azide.

HAUSP Antibody - 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, HAUSP

Dilution
WB~~1/500 - 1/2000
E~~N/A

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small

aliquots to prevent freeze-thaw cycles.

Precautions
HAUSP Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

HAUSP Antibody - 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).

Cellular Location
Nucleus. Cytoplasm Nucleus, PML body. Chromosome. Note=Present in a minority of ND10 nuclear bodies. Association with ICP0/VMW110 at early times of infection leads to an increased proportion of USP7-containing ND10 Colocalizes with ATXN1 in the nucleus. Colocalized with DAXX in speckled structures. Colocalized with PML and PTEN in promyelocytic leukemia protein (PML) nuclear bodies

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

HAUSP Antibody - 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

HAUSP Antibody - Images

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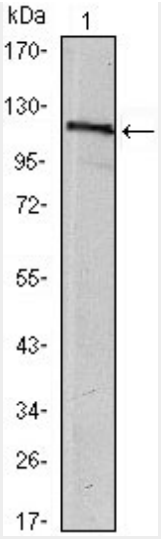

Figure 1: Western blot analysis using HAUSP mouse mAb against MCF-7 (1) cell lysate.

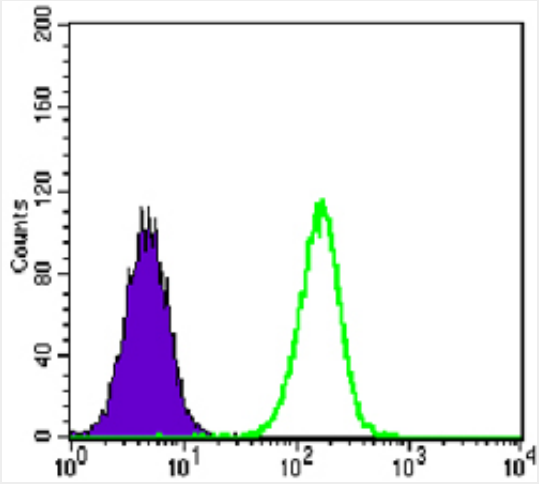

Figure 2: Flow cytometric analysis of A549 cells using anti-TCF3 mAb (green) and negative control (purple).

HAUSP Antibody - References

1. Cell Death Differ. 2007 Jul;14(7):1350-60. 2. Cancer Cell. 2007 Oct;12(4):342-54. 3. Blood. 2009 Apr 2;113(14):3264-75.

HAUSP Antibody - Citations

- Adenovirus E4-ORF3 Targets PIAS3 and Together with E1B-55K Remodels SUMO Interactions in the Nucleus and at Virus Genome Replication Domains.