abcam

ab108931

Anti-HAUSP / USP7 antibody [EPR4253]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 50% Tissue culture supernatant, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR4253
Purification technique	Affinity purification Protein A
Concentration	0.301 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	Antigen retrieval is recommended. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Expected

Species	Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250

Notes	-

Expected

Species	Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information USP7

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). (Microbial infection) Contributes to the overall stabilization and trans-activation capability of the herpesvirus 1 trans-acting transcriptional protein ICP0/VMW110 during HSV-1 infection. (Microbial infection) Upon infection with Epstein-Barr virus, the interaction with viral EBNA1 increases the association of USP7 with PML proteins, which is required for the polyubiquitylation and degradation of PML.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	HAUSP also known as USP7 is a deubiquitinating enzyme with a molecular mass of approximately 135 kDa. It functions by removing ubiquitin molecules from target proteins influencing their stability and activity. HAUSP is widely expressed in various human tissues with notable presence in the nucleus and cytoplasm. Its expression is essential for modulation of multiple signaling pathways. The enzyme's capacity to regulate protein ubiquitination dynamics makes it a significant player in cellular function.
Biological function summary	HAUSP influences several critical cellular processes including DNA repair transcriptional regulation and cell cycle progression. It often interacts with other proteins such as p53 to modify their functions by altering their ubiquitination status. HAUSP does not function in isolation but forms part of larger protein complexes where it plays a role in processing substrate proteins. Its ability to activate or deactivate proteins through deubiquitination highlights its importance in maintaining cellular homeostasis.
Pathways	Research identifies HAUSP as an important component in both the p53 pathway and the Wnt signaling pathway. Through the p53 pathway HAUSP directly interacts with the p53 tumor suppressor protein influencing cell cycle and apoptosis decisions. Its participation in the Wnt signaling pathway associates it with beta-catenin where it supports cellular proliferation and differentiation. These pathway interactions illustrate HAUSP's integral role in maintaining cellular function and responding to various signaling inputs.
Associated diseases and disorders	HAUSP has implications in cancer and neurodegenerative diseases. Aberrant activity or expression of HAUSP has been linked to tumorigenesis particularly through its interaction with the proteins p53 and MDM2 affecting cell survival and proliferation. In neurodegenerative conditions altered HAUSP activity may impact protein homeostasis and degradation pathways contributing to disease progression. Its connection to these proteins and disease states highlights its potential as a therapeutic target in associated disorders.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

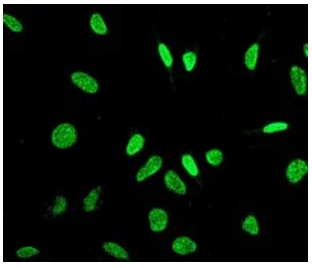
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

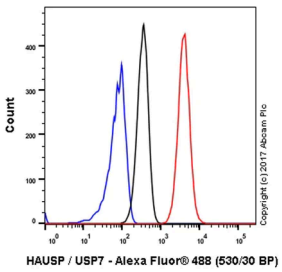
8 product images



Immunocytochemistry/ Immunofluorescence - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931)

HAUSP / USP7 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HAUSP / USP7 antibody

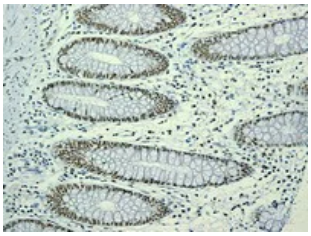
ab108931, at 1/100, staining HAUSP / USP7 in HeLa cells by Immunofluorescence.



Flow Cytometry (Intracellular) - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931)

HAUSP / USP7 Flow Cytometry (Intracellular) staining using rabbit Anti-HAUSP / USP7 antibody

Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling HAUSP / USP7 with unpurified ab108931 at 1/30 dilution (10ug/ml) (red). Cells were fixed with 80% methanol and permeabilised with 0.1% Tween-20. A Goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) (ab172730) was used as the isotype control, Cell without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.

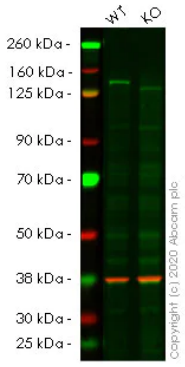


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931)

HAUSP / USP7 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HAUSP / USP7 antibody

ab108931, at 1/50, staining HAUSP / USP7 in Human colon tissue by Immunohistochemistry, Paraffin-embedded tissue.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Western blot - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931)



HAUSP / USP7 Western blot staining using rabbit Anti-HAUSP / USP7 antibody

Lanes 1- 2: Merged signal (red and green). Green - ab108931 observed at 128 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.
ab108931 was shown to react with HAUSP / USP7 in wild-type HEK-293T cells in western blot. The band observed in knockout cell line ab266535 (knockout cell lysate ab257284) lane below 128kDa may represent truncated forms and cleaved fragments. This has not been investigated further.
Wild-type HEK-293T and USP7 knockout HEK-293T cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab108931 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931) at 1/1000 dilution

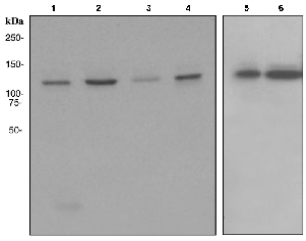
Lane 1:
Wild-type HEK293T cell lysate at 20 µg

Lane 2:
USP7 knockout HEK293T cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 128 kDa

Observed band size: 128 kDa



Western blot - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931)

HAUSP / USP7 Western blot staining using rabbit Anti-HAUSP / USP7 antibody

All lanes:
Western blot - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931) at 1/1000 dilution

Lane 1:
Ramos cell lysate at 10 µg

Lane 2:
HeLa cell lysate at 10 µg

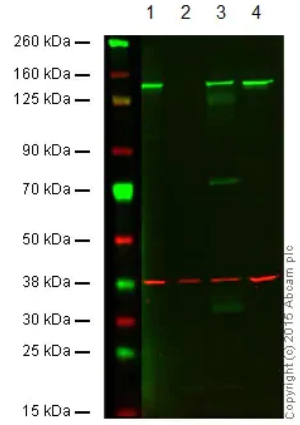
Lane 3:
A431 cell lysate at 10 µg

Lane 4:
MCF7 cell lysate at 10 µg

Lane 5:
C6 cell lysate at 10 µg

Lane 6:
RAW 264.7 cell lysate at 10 µg

Predicted band size: 128 kDa



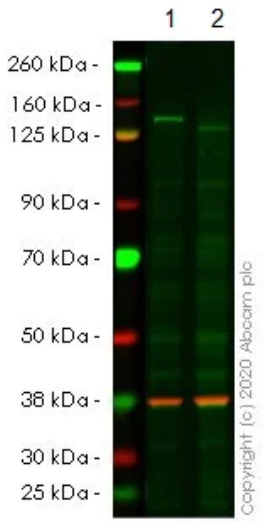
Western blot - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931)

HAUSP / USP7 Western blot staining using rabbit Anti-HAUSP / USP7 antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: HAUSP/USP7 knockout HAP1 cell lysate (20 µg)
Lane 3: HeLa cell lysate (20 µg)
Lane 4: MCF7 cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab108931 observed at 115 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab108931 was shown to specifically react with HAUSP/USP7 when HAUSP/USP7 knockout samples were used. Wild-type and HAUSP/USP7 knockout samples were subjected to SDS-PAGE. ab108931 and ab8245 (loading control to GAPDH) were diluted 1/1000 and 1/2000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10 000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931)

Predicted band size: 128 kDa



Western blot - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931)

HAUSP / USP7 Western blot staining using rabbit Anti-HAUSP / USP7 antibody

Lanes 1- 2: Merged signal (red and green). Green - ab108931 observed at 128 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.
ab108931 was shown to react with HAUSP / USP7 in wild-type HEK-293T cells in western blot. The band observed in CRISPR/Cas9 edited cell line ab266535 (CRISPR/Cas9 edited cell lysate ab257284) lane below 128kDa may represent truncated forms and cleaved fragments. This has not been investigated further. Wild-type HEK-293T and USP7 CRISPR/Cas9 edited HEK-293T cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab108931 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

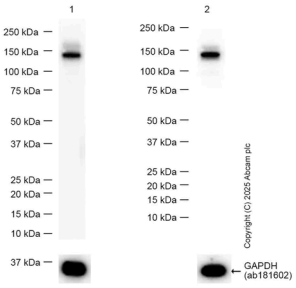
Lane 2:
USP7 CRISPR/Cas9 edited HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human USP7 (HAUSP) knockout HEK-293T cell line (ab266535)

Performed under reducing conditions.

Predicted band size: 128 kDa

Observed band size: 128 kDa



Western blot - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931)

HAUSP / USP7 Western blot staining using rabbit Anti-HAUSP / USP7 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) 1:1000,000 dilution.

Exposure time: Lane 1: 60 seconds; Lane 2: 3 seconds

All lanes:
Western blot - Anti-HAUSP / USP7 antibody [EPR4253] (ab108931) at 1/1000 dilution

Lane 1:
Rat spinal cord tissue lysate at 20 µg

Lane 2:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 128 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.