abcam

Product datasheet

Anti-KAP1 antibody ab10484

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Overview

Product name	Anti-KAP1 antibody
Description	Rabbit polyclonal to KAP1
Host species	Rabbit
Tested applications	**Suitable for:** WB, IP, IHC-P
Species reactivity	**Reacts with:** Mouse, Human **Predicted to work with:** Rat
Immunogen	Synthetic peptide corresponding to Human KAP1 aa 650-750. Database link: **Q13263**
Positive control	WB: HeLa, 293T, 3T3 whole cell lysate. IP: HeLa whole cell lysate. IHC-P: Human ovarian carcinoma, mouse plasmacytoma, mouse coronal brain tissue.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer	pH: 7 Preservative: 0.1% Sodium azide Constituents: 0.021% PBS, 1.764% Sodium citrate, 1.815% Tris
Purity	Immunogen affinity purified
Purification notes	Antibodies were affinity purified using the peptide immobilized on solid support.
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab10484 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★★ (3)	1/500 - 1/10000. Detects a band of approximately 110 kDa (predicted molecular weight: 100 kDa).
IP	★★★★☆ (1)	Use at 2-10 µg/mg of lysate.
IHC-P	★★★★☆ (1)	Use a concentration of 2 µg/ml.

Target

Function Nuclear corepressor for KRAB domain-containing zinc finger proteins (KRAB-ZFPs). Mediates gene silencing by recruiting CHD3, a subunit of the nucleosome remodeling and deacetylation (NuRD) complex, and SETDB1 (which specifically methylates histone H3 at 'Lys-9' (H3K9me)) to the promoter regions of KRAB target genes. Enhances transcriptional repression by coordinating the increase in H3K9me, the decrease in histone H3 'Lys-9 and 'Lys-14' acetylation (H3K9ac and H3K14ac, respectively) and the disposition of HP1 proteins to silence gene expression. Recruitment of SETDB1 induces heterochromatinization. May play a role as a coactivator for CEBPB and NR3C1 in the transcriptional activation of ORM1. Also corepressor for ERBB4. Inhibits E2F1 activity by stimulating E2F1-HDAC1 complex formation and inhibiting E2F1 acetylation. May serve as a partial backup to prevent E2F1-mediated apoptosis in the absence of RB1. Important regulator of CDKN1A/p21(CIP1). Has E3 SUMO-protein ligase activity toward itself via its PHD-type zinc finger.

Tissue specificity Expressed in all tissues tested including spleen, thymus, prostate, testis, ovary, small intestine, colon and peripheral blood leukocytes.

Pathway Protein modification; protein sumoylation.

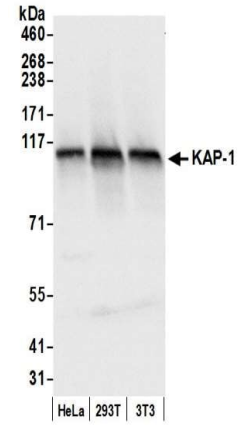
Sequence similarities Belongs to the TRIM/RBCC family.
Contains 2 B box-type zinc fingers.
Contains 1 bromo domain.
Contains 1 PHD-type zinc finger.
Contains 1 RING-type zinc finger.

Domain The HP1 box is both necessary and sufficient for HP1 binding.
The PHD-type zinc finger enhances CEBPB transcriptional activity. The PHD-type zinc finger, the HP1 box and the bromo domain, function together to assemble the machinery required for repression of KRAB domain-containing proteins. Acts as an intramolecular SUMO E3 ligase for autosumoylation of bromodomain.
The RING-finger-B Box-coiled-coil/tripartite motif (RBCC/TRIM motif) is required for interaction with the KRAB domain of KRAB-zinc finger proteins. Binds four zinc ions per molecule. The RING finger and the N-terminal of the leucine zipper alpha helical coiled-coil region of RBCC are required for oligomerization.
Contains one Pro-Xaa-Val-Xaa-Leu (PxVxL) motif, which is required for interaction with chromoshadow domains. This motif requires additional residues -7, -6, +4 and +5 of the central Val which contact the chromoshadow domain.

Post-translational Phosphorylated upon DNA damage, probably by ATM or ATR. ATM-induced phosphorylation on

modifications	Ser-824 represses sumoylation leading to the de-repression of expression of a subset of genes involved in cell cycle control and apoptosis in response to genotoxic stress. Dephosphorylation by the phosphatases, PPP1CA and PP1CB forms, allows sumoylation and expression of TRIM28 target genes. Sumoylation/desumoylation events regulate TRIM28-mediated transcriptional repression. Sumoylation is required for interaction with CHD3 and SETDB1 and the corepressor activity. Represses and is repressed by Ser-824 phosphorylation. Enhances the TRIM28 corepressor activity, inhibiting transcriptional activity of a number of genes including GADD45A and CDKN1A/p21. Lys-554, Lys-779 and Lys-804 are the major sites of sumoylation. In response to Dox-induced DNA damage, enhanced phosphorylation on Ser-824 prevents sumoylation and allows de-repression of CDKN1A/p21.
Cellular localization	Nucleus. Associated with centromeric heterochromatin during cell differentiation through CBX1.

Images



Western blot - Anti-KAP1 antibody (ab10484)

All lanes : Anti-KAP1 antibody (ab10484) at 0.1 µg/ml

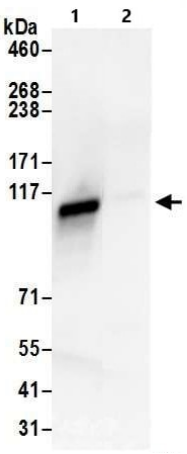
Lane 1 : HeLa whole cell lysate
Lane 2 : 293T whole cell lysate
Lane 3 : 3T3 whole cell lysate

Lysates/proteins at 50 µg per lane.

Predicted band size: 100 kDa

Exposure time: 1 second

Cells prepared using NETN lysis buffer. Chemiluminescence detection.



Immunoprecipitation - Anti-KAP1 antibody (ab10484)

CTCF was immunoprecipitated from 1 mg HeLa whole cell lysate with ab10484 at 6 µg per reaction. Western blot was performed on the immunoprecipitate using ab10484 at 1 µg/mL.

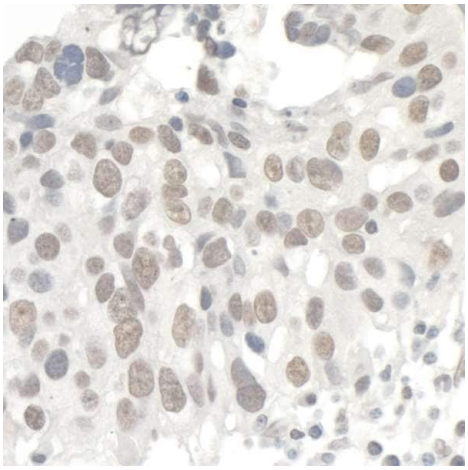
Lysates prepared using NETN lysis buffer.

Lane 1: ab10484 IP in HeLa whole cell lysate.

Lane 2: Contol IgG in HeLa whole cell lysate.

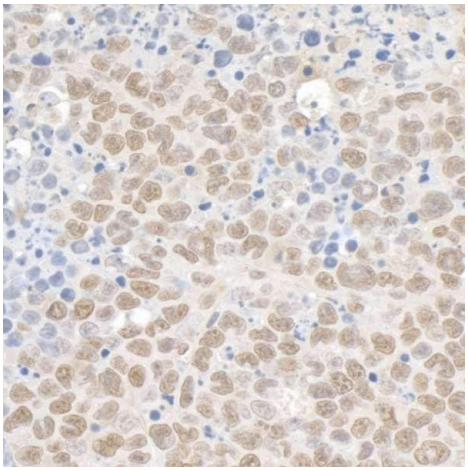
Detection: Chemiluminescence.

Exposure time: 3 seconds.



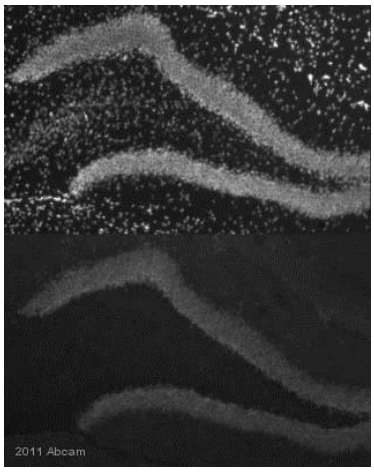
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-KAP1 antibody (ab10484)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human ovarian carcinoma labeling KAP1 with ab10484 at 1/5000 dilution (0.2 µg/ml). DAB detection, Hematoxylin counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-KAP1 antibody (ab10484)

Immunohistochemical analysis of formalin-fixed, paraffin-embedded mouse plasmacytoma, labeling KAP1 with ab10484 at 1 µg/mL. Detection: DAB.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-KAP1 antibody (ab10484)
Image courtesy of an anonymous Abreview.

ab10484 staining KAP1 in murine coronal brain tissue by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue was fixed with paraformaldehyde and permeabilized using 1% Triton. Samples were then blocked with 5% serum for 1 hour at 25°C followed by incubation with the primary antibody at 2µg/ml for 16 hours at 4°C. An Alexa-Fluor 488-conjugated donkey anti-rabbit polyclonal was used as secondary antibody at a 1/1000 dilution.
Dentate gyrus of the hippocampus immunostained with DAPI (top) and KAP1 (bottom), which nicely labels the nuclei of the entire dentate gyrus.

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