abcam

Product datasheet

Anti-KAP1 antibody ab190178

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Overview

Product name	Anti-KAP1 antibody
Description	Rabbit polyclonal to KAP1
Host species	Rabbit
Tested applications	**Suitable for:** ICC/IF, IP, WB
Species reactivity	**Reacts with:** Mouse, Rat, Chicken, Human
Immunogen	Recombinant fragment corresponding to Human KAP1 aa 400-650. Database link: **Q13263** Run BLAST with Run BLAST with
Positive control	U2OS cells transfected with KAP-1 siRNA, U2OS, mouse embryo fibroblast, rat INS-1 and chicken DT40 cell lysate. U2OS cells.
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. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.05% Sodium azide
Purity	Whole antiserum
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab190178 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
ICC/IF		1/2000.
IP		Use at an assay dependent concentration.
WB		1/3000. Predicted molecular weight: 88 kDa.

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.

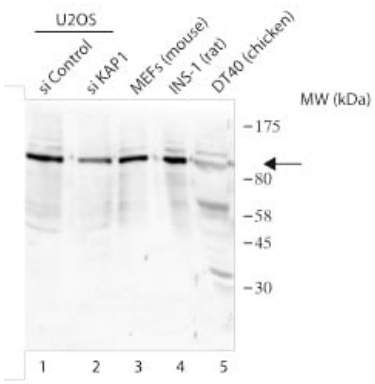
Post-translational modifications

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



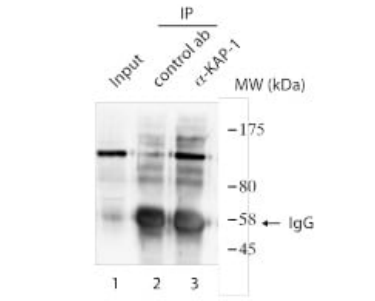
Western blot - Anti-KAP1 antibody (ab190178)

All lanes : Anti-KAP1 antibody (ab190178) at 1/3000 dilution

Lane 1 : Human U2OS cell lysate
Lane 2 : Human U2OS cells transfected with KAP1 siRNA
Lane 3 : Mouse embryo fibroblasts (MEFs) cell lysate
Lane 4 : Rat INS1 cell lysate
Lane 5 : Chicken DT40 cell lysate

Lysates/proteins at 20 µg per lane.

Predicted band size: 88 kDa



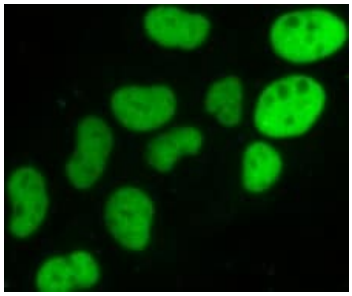
Immunoprecipitation - Anti-KAP1 antibody (ab190178)

Western blot analysis with ab190178 of immunoprecipitated U2OS cells extracts:

Lane 1: Input.

Lane 2: Immunoprecipitation with control serum.

Lane 3: Immunoprecipitation with ab190178 (5 µL).



Immunocytochemistry/ Immunofluorescence - Anti-KAP1 antibody (ab190178)

Immunofluorescence analysis of U2OS cells labeling KAP1 using ab190178 at a 1/2000 dilution.

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