abcam

Product datasheet

# Anti-KAP1 antibody ab3831

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## Overview

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|---|---|
| **Product name** | Anti-KAP1 antibody |
| **Description** | Goat polyclonal to KAP1 |
| **Host species** | Goat |
| **Tested applications** | **Suitable for:** ICC/IF, IHC-P, WB |
| **Species reactivity** | **Reacts with:** Mouse, Human |
| **Immunogen** | Synthetic peptide: SSQELSGGPGDGP, corresponding to amino acids 741-753 of KAP 1.<br>Run BLAST with ExPASy Run BLAST with NCBI |
| **Positive control** | WB: HepG2 lysate. IHC-P: Human breast 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.<br>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

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| **Form** | Liquid |
| **Storage instructions** | Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle. |
| **Storage buffer** | pH: 7.30<br>Preservative: 0.02% Sodium azide<br>Constituents: Tris buffered saline, 0.5% BSA |
| **Purity** | Immunogen affinity purified |
| **Purification notes** | Purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunizing peptide. |
| **Clonality** | Polyclonal |
| **Isotype** | IgG |

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab3831 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) | Use a concentration of 5 µg/ml. |
| **IHC-P** | | Use a concentration of 4 - 6 µg/ml. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. |
| **WB** | ★★★★★ (2) | Use a concentration of 1 - 3 µg/ml. Detects a band of approximately 110 kDa (predicted molecular weight: 100 kDa). 1 hour primary incubation is recommended for this product. |

## 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

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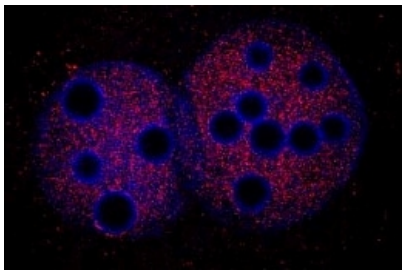
| | Val which contact the chromoshadow domain. |
| **Post-translational modifications** | Phosphorylated upon DNA damage, probably by ATM or ATR. ATM-induced phosphorylation on Ser-824 represses sumoylation leading to the de-repression of expression of a subset of genes involved in cell cycle control and apoptosis in response to genotoxic stress. Dephosphorylation by the phosphatases, PPP1CA and PP1CB forms, allows sumoylation and expression of TRIM28 target genes.<br>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

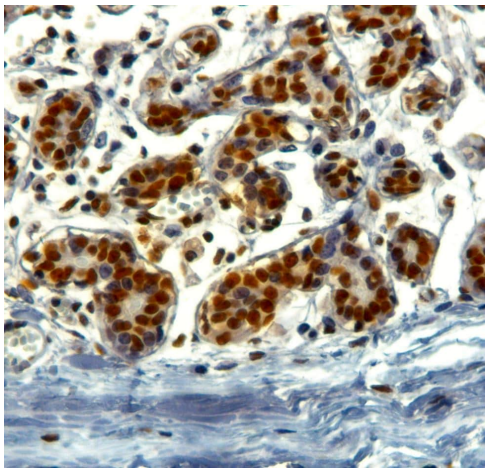

Western blot - Anti-KAP1 antibody (ab3831)

ab3831 staining (0.5µg/ml) of HepG2 lysate (RIPA buffer, 30µg total protein per lane). Primary incubated for 1 hour. Detected by western blot using chemiluminescence. ab3831 staining (0.5µg/ml) of HepG2 lysate (RIPA buffer, 30µg total protein per lane). Primary incubated for 1 hour. Detected by western blot using chemiluminescence.



Immunocytochemistry/ Immunofluorescence - Anti-KAP1 antibody (ab3831)

TIF1b is uniformly distributed in the two pronuclei of the mouse embryo at the late zygote stage. Mouse zygotes were processed for immunostaining using the KAP1 antibody. DNA is shown in blue. The dilution used was 1 to 100 in PBS-Tween with 3% BSA. This is part of the review submitted by ME Torres-Padilla on 27 July 2004.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-KAP1 antibody (ab3831)

Paraffin embedded human breast tissue stained for KAP1 using ab3831 at 2 µg/ml in immunohistochemical analysis. Steamed antigen retrieval with Tris/EDTA buffer pH 9, HRP-staining.

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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