

Product datasheet

Recombinant Human KAP1 protein (denatured)
ab171679

1 Image

Description

Product name	Recombinant Human KAP1 protein (denatured)
Purity	> 90 % SDS-PAGE.
Expression system	Escherichia coli
Accession	<u>Q13263</u>
Protein length	Protein fragment
Animal free	No
Nature	Recombinant
Species	Human
Sequence	MGSSHHHHHHSSGLVPRGSHMGSKLIYQLHRALKMIVDP VEPHGEMKFQ WDLNAWTKSAEAFGKIVAERP GTNSTGPAPMAPPRAPG PLSKQGS GSSQP MEVQEGYGFGSGDDPYSSAEPHVSGVKRSRSGEGEVS GLMRKVPRVSLER LDLDLTADSQPPVFKVFP GSTTEDYNLMIERGAAAAATGQ PGTAPAGTP GAPPLAGMANKEEETEAAIGAPPTATEGPETKPVLMALA EGPGAEGPRL ASPSGSTSSGLEVVAPEGTSAPGGPGTLD DSATICRVC QKPGDLVMCNQ CEFCFHL DCHLPALQDVPGE EWSCSLCHVLPDLKEEDG SLSLDGADSTGV VAKLSPANQRKCERVLLALFCHEPCRPLHQLATDSTFSL DQPGGTLDLTL IRARLQEKLSPPYSSPQEFAQDVGRMFKQFNKLTEDKAD VQSIIGLQRFF ETRMNEAFGD
Predicted molecular weight	49 kDa including tags
Amino acids	366 to 802
Tags	His tag N-Terminus

Specifications

Our **Abpromise guarantee** covers the use of **ab171679** in the following tested applications.

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

Applications SDS-PAGE

Form Liquid

Preparation and Storage

Stability and Storage 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.

pH: 8.00

Constituents: 2.4% Urea, 0.32% Tris HCl, 10% Glycerol (glycerin, glycerine)

General Info

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

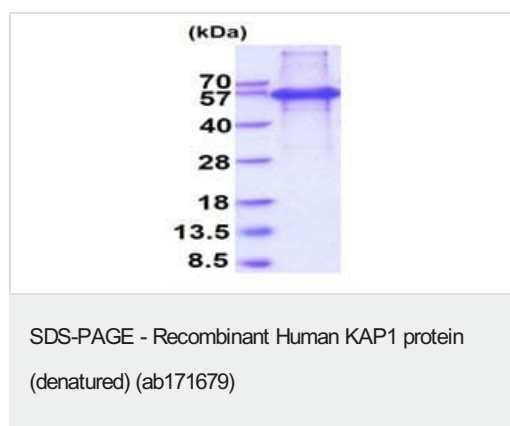
Phosphorylated upon DNA damage, probably by ATM or ATR. ATM-induced phosphorylation on Ser-824 represses sumoylation leading to the de-repression of expression of a subset of genes involved in cell cycle control and apoptosis in response to genotoxic stress. Dephosphorylation by the phosphatases, PPP1CA 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



15% SDS-PAGE analysis of ab171679 (3µg).

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