SANTA CRUZ BIOTECHNOLOGY, INC.

KAP3 (D-10): sc-374384

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mouse kinesin superfamily-associated protein 3 (KAP3) and the human homolog KAP3A are globular proteins that function as linkers of chromosome associated proteins. The mouse gene encoding KAP3 generates an additional alternative isoform, from the insertion of a stop codon at the carboxy-terminus, to produce a truncated KAP3 protein that is designated KAP3B. KAP3 was originally shown to associate with kinesin superfamily proteins, KIF3A and KIF3B, which function as an axonal motor for membranous organelle transport. The initial studies involving the human homolog of KAP3, which is alternatively designated SMAP (for small G protein GDP dissociation stimulator (Smg GDS)-associated protein), indicated that KAP3 is an adaptor protein for Smg GDS and kinesin II and a kinase substrate for tyrosine phosphorylation by v-Src. Subsequent studies have shown that SMAP/KAP3A forms ternary complexes with HCAP (human chromosome-associated polypeptide), a member of the stability of mini-chromosomes family, and KIF3A/B. Once formed, these complexes assist in the association of chromosomes with the spindle and in chromosome movement during interphase.

REFERENCES

1. Yamazaki, H., et al. 1995. KIF3A/B: a heterodimeric kinesin superfamily protein that works as a microtubule plus end-directed motor for membrane organelle transport. J. Cell Biol. 130: 1387-1399.
2. Henson, J.H., et al. 1995. Immunolocalization of the heterotrimeric kinesin-related protein $KRP_{(85/95)}$ in the mitotic apparatus of sea urchin embryos. Dev. Biol. 171: 182-194.
3. Shimizu, K., et al. 1996. SMAP, an Smg GDS-associating protein having arm repeats and phosphorylated by Src tyrosine kinase. J. Biol. Chem. 271: 27013-27017.
4. Yamazaki, H., et al. 1996. Cloning and characterization of KAP3: a novel kinesin superfamily-associated protein of KIF3A/3B. Proc. Natl. Acad. Sci. USA 93: 8443-8448.
5. Shimizu, K., et al. 1998. Complex formation of SMAP/KAP3, a KIF3A/B ATPase motor-associated protein, with a human chromosome-associated polypeptide. J. Biol. Chem. 273: 6591-6594.

CHROMOSOMAL LOCATION

Genetic locus: KIFAP3 (human) mapping to 1q24.2; Kifap3 (mouse) mapping to 1 H2.2.

SOURCE

KAP3 (D-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 761-787 at the C-terminus of KAP3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374384 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

KAP3 (D-10) is recommended for detection of KAP3A of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

KAP3 (D-10) is also recommended for detection of KAP3A in additional species, including equine and porcine.

Suitable for use as control antibody for KAP3 siRNA (h): sc-40721, KAP3 siRNA (m): sc-40722, KAP3 shRNA Plasmid (h): sc-40721-SH, KAP3 shRNA Plasmid (m): sc-40722-SH, KAP3 shRNA (h) Lentiviral Particles: sc-40721-V and KAP3 shRNA (m) Lentiviral Particles: sc-40722-V.

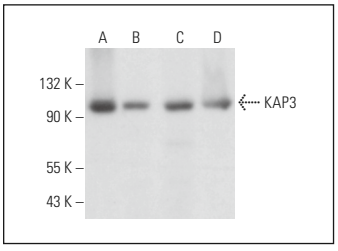
Molecular Weight of KAP3: 95 kDa.

Positive Controls: KNRK nuclear extract: sc-2141, HeLa nuclear extract: sc-2120 or NIH/3T3 nuclear extract: sc-2138.

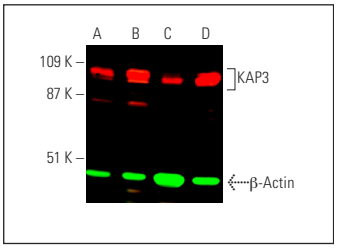
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



KAP3 (D-10): sc-374384. Western blot analysis of KAP3 expression in KNRK nuclear extract (**A**) and human brain (**B**), mouse brain (**C**) and rat brain (**D**) tissue extracts.



Simultaneous near-infrared western blot analysis of KAP3 expression, detected with KAP3 (D-10): sc-374384 and m-IgGλ BP-CFL 790: sc-516195 and β-Actin expression, detected with β-Actin (C4): sc-47778 and m-IgGκ BP-CFL 680: sc-516180 in HeLa (**A**), A-431 (**B**), NIH/3T3 (**C**) and KNRK (**D**) nuclear extracts.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.