

KAP3 (14): sc-135958

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 C-terminus, to produce a truncated KAP3 protein 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, also 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.
6. Takeda, S., et al. 1999. Left-right asymmetry and kinesin superfamily protein KIF3A: new insights in determination of laterality and mesoderm induction by *kif3A*^{-/-} mice analysis. *J. Cell Biol.* 145: 825-836.

CHROMOSOMAL LOCATION

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

SOURCE

KAP3 (14) is a mouse monoclonal antibody raised against amino acids 612-787 of KAP3A of mouse origin.

PRODUCT

Each vial contains 50 µg IgG₁ in 500 µl of PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol and 0.04% stabilizer protein.

APPLICATIONS

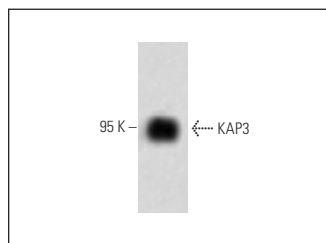
KAP3 (14) is recommended for detection of KAP3A of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

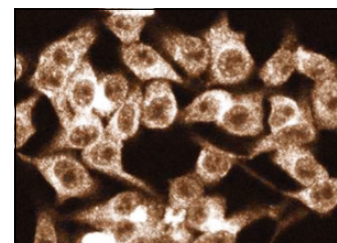
Molecular Weight of KAP3: 95 kDa.

Positive Controls: SW-13 cell lysate: sc-24778, A-431 nuclear extract: sc-2122 or HeLa whole cell lysate: sc-2200.

DATA



KAP3 (14): sc-135958. Western blot analysis of KAP3 expression in SW-13 whole cell lysate.



KAP3 (14): sc-135958. Immunofluorescence staining of HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Boehlke, C., et al. 2013. Kif3a guides microtubular dynamics, migration and lumen formation of MDCK cells. *PLoS ONE* 8: e62165.

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. Not for resale.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.