

# KAP3 (B-4): sc-55599

## 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.
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<sup>-/-</sup> 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 (B-4) is a mouse monoclonal antibody raised against amino acids 494-793 mapping at the C-terminus of KAP3 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

KAP3 (B-4) is recommended for detection of KAP3A and KAP3B of mouse, rat and human 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)], 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).

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.

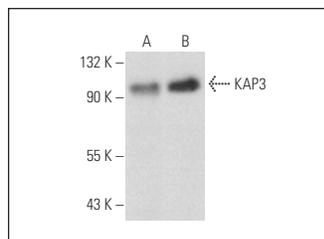
Molecular Weight of KAP3: 95 kDa.

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

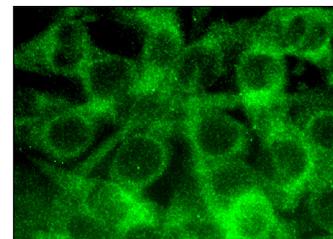
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



KAP3 (B-4): sc-55599. Western blot analysis of KAP3 expression in NIH/3T3 (A) and KNRK (B) nuclear extracts.



KAP3 (B-4): sc-55599. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.