

KAP3 (D-6): sc-55598



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.

CHROMOSOMAL LOCATION

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

SOURCE

KAP3 (D-6) 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_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

KAP3 (D-6) is available conjugated to agarose (sc-55598 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-55598 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55598 PE), fluorescein (sc-55598 FITC), Alexa Fluor® 488 (sc-55598 AF488), Alexa Fluor® 546 (sc-55598 AF546), Alexa Fluor® 594 (sc-55598 AF594) or Alexa Fluor® 647 (sc-55598 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55598 AF680) or Alexa Fluor® 790 (sc-55598 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

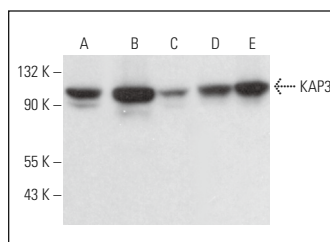
KAP3 (D-6) is recommended for detection of KAP3A and KAP3B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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.

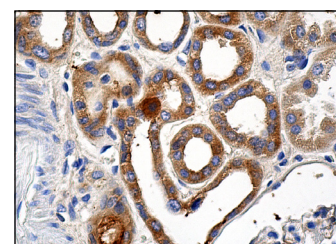
Molecular Weight of KAP3: 95 kDa.

Positive Controls: A549 cell lysate: sc-2413, MH-S whole cell lysate: sc-364785 or A2058 whole cell lysate: sc-364178.

DATA



KAP3 (D-6): sc-55598. Western blot analysis of KAP3 expression in A549 (A), MH-S (B), NTERA-2 cl.D1 (C), A-431 (D) and A2058 (E) whole cell lysates.



KAP3 (D-6): sc-55598. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Landers, J.E., et al. 2009. Reduced expression of the kinesin-associated protein 3 (KIFAP3) gene increases survival in sporadic amyotrophic lateral sclerosis. *Proc. Natl. Acad. Sci. USA* 106: 9004-9009.
2. Traynor, B.J., et al. 2010. Kinesin-associated protein 3 (KIFAP3) has no effect on survival in a population-based cohort of ALS patients. *Proc. Natl. Acad. Sci. USA* 107: 12335-12338.
3. Becher, A., et al. 2017. The armadillo protein p0071 controls KIF3 motor transport. *J. Cell Sci.* 130: 3374-3387.
4. Li, Y.F., et al. 2020. CircRNA_101951 promotes migration and invasion of colorectal cancer cells by regulating the KIF3A-mediated EMT pathway. *Exp. Ther. Med.* 19: 3355-3361.
5. Soda, T., et al. 2022. Loss of KAP3 decreases intercellular adhesion and impairs intracellular transport of laminin in signet ring cell carcinoma of the stomach. *Sci. Rep.* 12: 5050.

RESEARCH USE

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