SANTA CRUZ BIOTECHNOLOGY, INC.

KIF4A/B (C-19): sc-48567

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The kinesin superfamily proteins (KIFs) are microtubule-dependent molecular motors that transport membranous organelles and protein complexes in a microtubule- and ATP-dependent manner. Cells use KIFs to tightly control the direction, destination and speed of transportation of a variety of important functional molecules, including mRNA. KIF4A functions as an essential chromosome-associated molecular motor involved in faithful chromosome segregation. It is found in the nucleoplasm during interphase and on condensed chromosome arms during mitosis. KIF4A accumulates in the mid-zone duing late anaphase and on the cytokinetic ring during cytokinesis. KIF4 binds to and translocates PRC1, a spindle mid-zone-associated cyclin-dependent kinase that plays a role in cytokinesis. KIF4A may also interact with the condensin I and II complexes. Loss of KIF4A leads to chromosome hypercondensation, suggesting that it is necessary for retaining normal chromosome architecture.

REFERENCES

1. Nakagawa, T., Tanaka, Y., Matsuoka, E., Kondo, S., Okada, Y., Noda, Y., Kanai, Y. and Hirokawa, N. 1997. Identification and classification of 16 new kinesin superfamily (KIF) proteins in mouse genome. Proc. Nat. Acad. Sci. USA 94: 9654-9659.
2. Miki, H., Setou, M., Kaneshiro, K. and Hirokawa, N. 2001. All kinesin superfamily protein, KIF, genes in mouse and human. Proc. Natl. Acad. Sci. USA 98: 7004-7011.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300521. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Kurasawa, Y., Earnshaw, W.C., Mochizuki, Y., Dohmae, N. and Todokoro, K. 2004. Essential roles of KIF4 and its binding partner PRC1 in organized central spindle midzone formation. EMBO J. 23: 3237-3248.
5. Mazumdar, M., Sundareshan, S. and Misteli, T. 2004. Human chromokinesin KIF4A functions in chromosome condensation and segregation. J. Cell Biol. 166: 613-620.

CHROMOSOMAL LOCATION

Genetic locus: KIF4A (human) mapping to Xq13.1, KIF4B (human) mapping to 5q33.2; Kif4 (mouse) mapping to X C3, Kif4-ps (mouse) mapping to 12 E.

SOURCE

KIF4A/B (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of KIF4A of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-48567 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

KIF4A/B (C-19) is recommended for detection of KIF4A isoform 1 and KIF4B 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).

KIF4A/B (C-19) is also recommended for detection of KIF4A isoform 1 and KIF4B in additional species, including equine, canine, bovine and porcine.

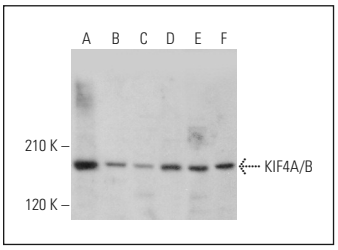
Molecular Weight of KIF4A/B: 140 kDa.

Positive Controls: F9 cell lysate: sc-2245, HEK293 whole cell lysate: sc-45136 or Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



KIF4A/B (C-19): sc-48567. Western blot analysis of KIF4A/B expression in F9 (**A**), NIH/3T3 (**B**), HeLa (**C**), U-251-MG (**D**), HEK293 (**E**) and Jurkat (**F**) whole cell lysates.

STORAGE

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

PROTOCOLS

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