

## KIF3B (C-18): sc-18749

### BACKGROUND

The kinesins constitute a large family of microtubule-dependent motor proteins, which are responsible for the distribution of numerous organelles, vesicles and macromolecular complexes throughout the cell. Individual kinesin members play crucial roles in cell division, intracellular transport and membrane trafficking events including endocytosis and transcytosis. Members of the heterotrimeric kinesin II family of microtubule associated motors generally contain two different motor subunits from the KIF3 family, which includes KIF3A, B and C. KIF3 isoforms mediate anterograde transport of membrane bound organelles in neurons and melanosomes, transport between the endoplasmic reticulum and the Golgi, and transport of protein complexes within cilia and flagella required for their morphogenesis. The human KIF3B gene maps to chromosome 20 and encodes a 747 amino acid protein that is ubiquitously expressed. The KIF3B protein is essential for the left-right determination through a mechanism that produces a putative morphogen gradient along the left-right axis in the node.

### REFERENCES

1. Yamazaki, H., Nakata, T., Okada, Y. and Hirokawa, N. 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. Nonaka, S., Tanaka, Y., Okada, Y., Takeda, S., Harada, A., Kanai, Y., Kido, M. and Hirokawa, N. 1998. Randomization of left-right asymmetry due to loss of nodal cilia generating leftward flow of extraembryonic fluid in mice lacking KIF3B motor protein. *Cell* 95: 829-837.
3. Hamm-Alvarez, S.F. 1998 Molecular motors and their role in membrane traffic. *Adv. Drug Deliv. Rev.* 29: 229-242.
4. Cole D.G. 1999. Kinesin-II, the heteromeric kinesin. *Cell. Mol. Life Sci.* 56: 217-226.
5. Hirokawa, N. 2000. Stirring up development with the heterotrimeric kinesin KIF3. *Traffic* 1: 29-34.
6. Yang Z., Xia C., Roberts E.A., Bush K., Nigam S.K. and Goldstein L.S. 2001 Molecular cloning and functional analysis of mouse C-terminal kinesin motor KIF3C. *Mol. Cell. Biol.* 21: 75-70.
7. Yang, Z., Roberts, E. A. and Goldstein, L. S. 2001. Functional analysis of mouse kinesin motor KIF3C. *Mol. Cell. Biol.* 21: 5306-5311.
8. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 603060. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

### CHROMOSOMAL LOCATION

Genetic locus: KIF3B (human) mapping to 20q11.21; Kif3b (mouse) mapping to 2 H1.

### SOURCE

KIF3B (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of KIF3B 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-18749 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

KIF3B (C-18) is recommended for detection of KIF3B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

KIF3B (C-18) is also recommended for detection of KIF3B in additional species, including equine and canine.

Suitable for use as control antibody for KIF3B siRNA (h): sc-43376, KIF3B siRNA (m): sc-43377, KIF3B shRNA Plasmid (h): sc-43376-SH, KIF3B shRNA Plasmid (m): sc-43377-SH, KIF3B shRNA (h) Lentiviral Particles: sc-43376-V and KIF3B shRNA (m) Lentiviral Particles: sc-43377-V.

Molecular Weight of KIF3B: 85 kDa.

### 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) 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<sup>™</sup> Mounting Medium: sc-24941.

### 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) or our catalog for detailed protocols and support products.



Try **KIF3B (G-5): sc-514165** or **KIF3B (35): sc-136353**, our highly recommended monoclonal alternatives to KIF3B (C-18).