

# KIF3B (G-5): sc-514165

## 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., 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. Nonaka, S., et al. 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

KIF3B (G-5) is a mouse monoclonal antibody raised against amino acids 666-725 mapping near the C-terminus of KIF3B of human 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.

KIF3B (G-5) is available conjugated to agarose (sc-514165 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514165 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514165 PE), fluorescein (sc-514165 FITC), Alexa Fluor® 488 (sc-514165 AF488), Alexa Fluor® 546 (sc-514165 AF546), Alexa Fluor® 594 (sc-514165 AF594) or Alexa Fluor® 647 (sc-514165 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514165 AF680) or Alexa Fluor® 790 (sc-514165 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

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

## APPLICATIONS

KIF3B (G-5) is recommended for detection of KIF3B 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

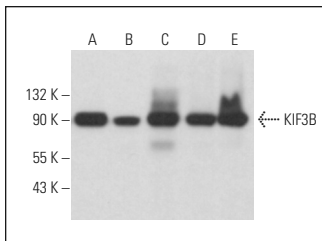
Molecular Weight of KIF3B: 85 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, HeLa whole cell lysate: sc-2200 or RT-4 whole cell lysate: sc-364257.

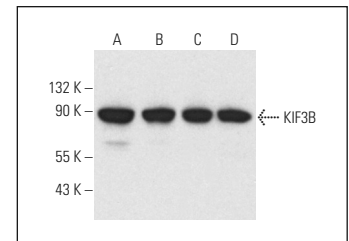
## RECOMMENDED SUPPORT REAGENTS

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



KIF3B (G-5): sc-514165. Western blot analysis of KIF3B expression in Neuro-2A (A) and IB4 (B) whole cell lysates and mouse brain (C), rat hippocampus (D) and rat brain (E) tissue extracts.



KIF3B (G-5): sc-514165. Western blot analysis of KIF3B expression in T-47D (A), Caki-1 (B), HeLa (C) and RT-4 (D) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Ran, J., et al. 2020. ASK1-mediated phosphorylation blocks HDAC6 ubiquitination and degradation to drive the disassembly of photoreceptor connecting cilia. *Dev. Cell* 53: 287-299.e5.
2. Joseph, N.F., et al. 2020. Molecular motor KIF3B acts as a key regulator of dendritic architecture in cortical neurons. *Front. Cell. Neurosci.* 14: 521199.

## STORAGE

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