

# KIF21B (4C12): sc-517174

## 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. KIF21B (kinesin family member 21B) is a 1,637 amino acid protein that contains one kinesin-motor domain, which is responsible for the ATP-dependent movement of KIF21B across microtubules, and 7 WD repeats, which may be involved in binding to cargo. KIF21B is highly localized in dendrites and therefore, involved in neuronal dendritic transport. The gene encoding human KIF21B maps to chromosome 1, the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome.

## REFERENCES

1. Vallee, R.B. and Shpetner, H.S. 1990. Motor proteins of cytoplasmic microtubules. *Annu. Rev. Biochem.* 59: 909-932.
2. Endow, S.A. 1991. The emerging kinesin family of microtubule motor proteins. *Trends Biochem. Sci.* 16: 221-225.
3. Brady, S.T. 1995. A kinesin medley: biochemical and functional heterogeneity. *Trends Cell Biol.* 5: 159-164.
4. Marszalek, J.R., et al. 1999. Novel dendritic kinesin sorting identified by different process targeting of two related kinesins: KIF21A and KIF21B. *J. Cell Biol.* 145: 469-479.
5. Miki, H., et al. 2001. All kinesin superfamily protein, KIF, genes in mouse and human. *Proc. Natl. Acad. Sci. USA* 98: 7004-7011.
6. Weise, A., et al. 2005. New insights into the evolution of chromosome 1. *Cytogenet. Genome Res.* 108: 217-222.
7. Marzin, Y., et al. 2006. Chromosome 1 abnormalities in multiple myeloma. *Anticancer Res.* 26: 953-959.
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## CHROMOSOMAL LOCATION

Genetic locus: KIF21B (human) mapping to 1q32.1; Kif21b (mouse) mapping to 1 E4.

## SOURCE

KIF21B (4C12) is a mouse monoclonal antibody raised against amino acids 1183-1282 representing partial length KIF21B of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

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

## APPLICATIONS

KIF21B (4C12) is recommended for detection of KIF21B 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for KIF21B siRNA (h): sc-78790, KIF21B siRNA (m): sc-105595, KIF21B shRNA Plasmid (h): sc-78790-SH, KIF21B shRNA Plasmid (m): sc-105595-SH, KIF21B shRNA (h) Lentiviral Particles: sc-78790-V and KIF21B shRNA (m) Lentiviral Particles: sc-105595-V.

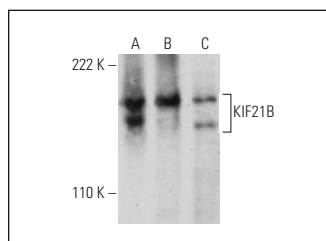
Molecular Weight of KIF21B: 178 kDa.

Positive Controls: Y79 cell lysate: sc-2240, U266 whole cell lysate: sc-364800 or C6 whole cell lysate: sc-364373.

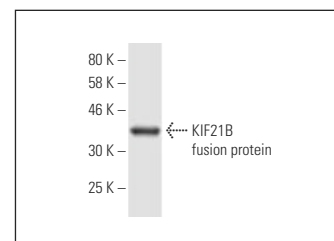
## RECOMMENDED SUPPORT REAGENTS

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).

## DATA



KIF21B (4C12): sc-517174. Western blot analysis of KIF21B expression in Y79 (A), U266 (B) and C6 (C) whole cell lysates.



KIF21B (4C12): sc-517174. Western blot analysis of human recombinant KIF21B fusion protein.

## SELECT PRODUCT CITATIONS

1. Xu, S., et al. 2022. Identification of KIF21B as a biomarker for colorectal cancer and associated with poor prognosis. *J. Oncol.* 2022: 7905787.

## 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](http://www.scbt.com) for detailed protocols and support products.