

KIF13A (C-20): sc-16789

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. Kinesins also play crucial roles in cell division, intracellular transport and membrane trafficking events including endocytosis and transcytosis. KIF13A, a novel plus end-directed microtubule-dependent motor protein, belongs to the unc-104/KIF1A kinesin subfamily and represents the orthologue of *Drosophila* kinesin-73. KIF13A has several alternative transcripts, which are differentially expressed in human tissues. KIF13A associates with β 1-Adaptin, a subunit of the AP-1 adaptor complex. Transmembrane receptors and some membrane-bound proteins are postulated to bind KIFs to cargo vesicles. KIF13A associates with cargo vesicles that contain AP-1 and mannose-6-phosphate receptor (M6PR). KIF13A transports M6PR-containing vesicles and targets M6PR from the *trans*-Golgi network to the plasma membrane via a direct interaction with the AP-1 adaptor complex. Overexpression of KIF13A results in mislocalization of AP-1 and M6PR, and functional blocking of KIF13A reduces M6PR cell surface expression. KIF13A is also found to have significant linkage to schizophrenia.

REFERENCES

1. Hamm-Alvarez, S.F. 1998. Molecular motors and their role in membrane traffic. *Adv. Drug Deliv. Rev.* 29: 229-242.
2. Cole, D.G. 1999. Kinesin-II, the heteromeric kinesin. *Cell. Mol. Life Sci.* 56: 217-226.
3. Nakagawa, T., et al. 2000. A novel motor, KIF13A, transports mannose-6-phosphate receptor to plasma membrane through direct interaction with AP-1 complex. *Cell* 103: 569-581.
4. Yang, Z., et al. 2001. Molecular cloning and functional analysis of mouse C-terminal kinesin motor KIFC3. *Mol. Cell. Biol.* 21: 765-770.
5. Jamain, S., et al. 2001. Identification of the human KIF13A gene homologous to *Drosophila* kinesin-73 and candidate for schizophrenia. *Genomics* 74: 36-44.

CHROMOSOMAL LOCATION

Genetic locus: KIF13A (human) mapping to 6p22.3; Kif13a (mouse) mapping to 13 A5.

SOURCE

KIF13A (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of KIF13A of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-16789 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KIF13A (C-20) is recommended for detection of KIF13A (kinesin family member 13A) 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

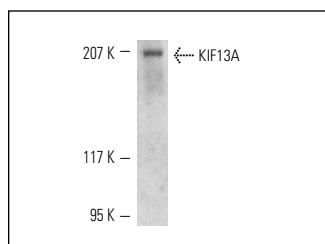
KIF13A (C-20) is also recommended for detection of KIF13A (kinesin family member 13A) in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for KIF13A siRNA (h): sc-43380, KIF13A siRNA (m): sc-43381, KIF13A shRNA Plasmid (h): sc-43380-SH, KIF13A shRNA Plasmid (m): sc-43381-SH, KIF13A shRNA (h) Lentiviral Particles: sc-43380-V and KIF13A shRNA (m) Lentiviral Particles: sc-43381-V.

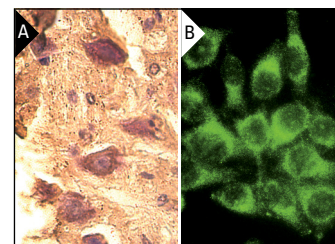
Molecular Weight of KIF13A: 200 kDa.

Positive Controls: mouse lung extract: sc-2390, HeLa whole cell lysate: sc-2200 or mouse brain extract: sc-2253.

DATA



KIF13A (C-20): sc-16789. Western blot analysis of KIF13A expression in mouse lung tissue extract.



KIF13A (C-20): sc-16789. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing cytoplasmic localization (A). Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (B).

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 or our catalog for detailed protocols and support products.