SANTA CRUZ BIOTECHNOLOGY, INC.

KIF13A (N-19): sc-16787

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 β1-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., Setou, M., Seog, D., Ogasawara, K., Dohmae, N., Takio, K. and Hirokawa N. 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., 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 KIFC3. Mol. Cell. Biol. 21: 765-770.

CHROMOSOMAL LOCATION

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

SOURCE

KIF13A (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of KIF13A 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-16787 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

KIF13A (N-19) is recommended for detection of KIF13A 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).

KIF13A (N-19) is also recommended for detection of KIF13A in additional species, including equine.

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.

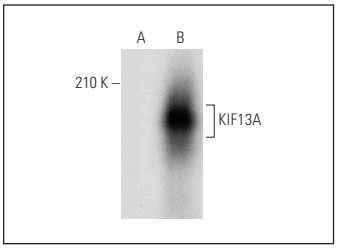
Molecular Weight of KIF13A: 200 kDa.

Positive Controls: KIF13A (m): 293T Lysate: sc-178841, mouse brain extract: sc-2253 or HeLa whole cell lysate: sc-2200.

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



KIF13A (N-19): sc-16787. Western blot analysis of KIF13A expression in non-transfected: sc-117752 (**A**) and mouse KIF13A transfected: sc-178841 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Orlic, M., Spencer, C.E., Wang, L. and Gallie, B.L. 2006. Expression analysis of 6p22 genomic gain in retinoblastoma. Genes Chromosomes Cancer 45: 72-82.

RESEARCH USE

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