

NKHC1 (G-20): sc-13353

BACKGROUND

NKHC1 (neuronal kinesin heavy chain 1), also known as KIF5A; kinesin family member 5A, NKHC; kinesin heavy chain, neuron-specific, SPG10 and spastic paraplegia 10, is a neuronal-specific component of a multi-subunit "molecular motor" complex that mediates intracellular organelle transport. Mutations in the gene encoding NKHC1 cause autosomal dominant spastic paraplegia 10. NKHC1 has a pan-neuronal distribution in the nervous system. Rat tissue extracts by immunoblot of NKHC1 can produce a doublet only in brain and sciatic nerve tissue. NKHC1 is distributed throughout the central nervous system and is enriched in subsets of neurons. Within cultured hippocampal neurons, NKHC1 is concentrated in the perinuclear region of the cell body. Kinesin superfamily proteins like NKHC1 are the molecular motors conveying cargos along microtubules.

REFERENCES

1. Niclas, J., et al. 1994. Cloning and localization of a conventional kinesin motor expressed exclusively in neurons. *Neuron* 12: 1059-1072.
2. Rahman, A., et al. 1999. Defective kinesin heavy chain behavior in mouse kinesin light chain mutants. *J. Cell Biol.* 146: 1277-1288.
3. Kanai, Y., et al. 2000. KIF5C, a novel neuronal kinesin enriched in motor neurons. *J. Neurosci.* 20: 6374-6384.
4. Xia, C.H., et al. 2003. Abnormal neurofilament transport caused by targeted disruption of neuronal kinesin heavy chain KIF5A. *J. Cell Biol.* 161: 55-66.
5. Macioce, P., et al. 2003. β -dystrobrein interacts directly with kinesin heavy chain in brain. *J. Cell Sci.* 116: 4847-4856.
6. Sotelo-Silveira, J.R., et al. 2004. Myosin Va and kinesin II motor proteins are concentrated in ribosomal domains (periaxoplasmic ribosomal plaques) of myelinated axons. *J. Neurobiol.* 60: 187-196.

CHROMOSOMAL LOCATION

Genetic locus: KIF5A (human) mapping to 12q13.3; Kif5a (mouse) mapping to 10 D3.

SOURCE

NKHC1 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of NKHC1 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-13353 P, (100 μ g 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

NKHC1 (G-20) is recommended for detection of neuronal kinesin heavy chain 1 (NKHC1) of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

NKHC1 (G-20) is also recommended for detection of neuronal kinesin heavy chain 1 (NKHC 1) in additional species, including canine and bovine.

Suitable for use as control antibody for NKHC1 siRNA (h): sc-36073, NKHC1 siRNA (m): sc-36074, NKHC1 shRNA Plasmid (h): sc-36073-SH, NKHC1 shRNA Plasmid (m): sc-36074-SH, NKHC1 shRNA (h) Lentiviral Particles: sc-36073-V and NKHC1 shRNA (m) Lentiviral Particles: sc-36074-V.

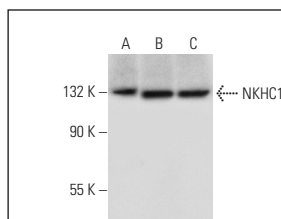
Molecular Weight of NKHC1: 133 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, NKHC1 (h2): 293T Lysate: sc-112832 or K-562 whole cell lysate: sc-2203.

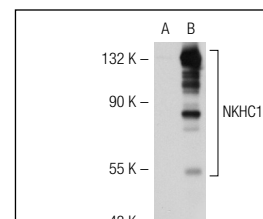
RECOMMENDED SECONDARY REAGENTS

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



NKHC1 (G-20): sc-13353. Western blot analysis of NKHC1 expression in C6 (A), SH-SY5Y (B) and K-562 (C) whole cell lysates.



NKHC1 (G-20): sc-13353. Western blot analysis of NKHC1 expression in non-transfected: sc-117752 (A) and human NKHC1 transfected: sc-112832 (B) 293T whole cell lysates.

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.