

KIF3A (28): sc-135960

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. KIF3A may influence neurogenesis at the level of embryonic cellular events, where the asymmetry of the genetic control circuit controlling left-right (L-R) axis determination is defined. Loss of KIF3A function in mice photoreceptors causes apoptotic cell death, suggesting that kinesin II mediated transport is required for proper cell fate.

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. Marszalek, J.R., et al. 1999. Situs inversus and embryonic ciliary morphogenesis defects in mouse mutants lacking the KIF3A subunit of kinesin-II. *Proc. Natl. Acad. Sci. USA* 96: 5043-5048.
4. Takeda, S., et al. 1999. Left-right asymmetry and kinesin superfamily protein KIF3A: new insights in determination of laterality and mesoderm induction by KIF3A^{-/-} mice analysis. *J. Cell Biol.* 145: 825-836.
5. Hirokawa, N. 2000. Stirring up development with the heterotrimeric kinesin KIF3. *Traffic* 1: 29-34.
6. Yang Z., et al. 2001. Molecular cloning and functional analysis of mouse C-terminal kinesin motor KIF3C. *Mol. Cell. Biol.* 21: 765-770.
7. Yang, Z., et al. 2001. Functional analysis of mouse kinesin motor KIF3C. *Mol. Cell. Biol.* 21: 5306-5311.
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CHROMOSOMAL LOCATION

Genetic locus: KIF3A (human) mapping to 5q31.1; Kif3a (mouse) mapping to 11 B1.3.

SOURCE

KIF3A (28) is a mouse monoclonal antibody raised against amino acids 563-671 of KIF3A of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol and 0.04% stabilizer protein.

APPLICATIONS

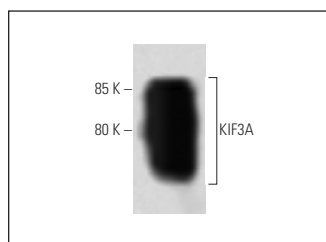
KIF3A (28) is recommended for detection of KIF3A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for KIF3A siRNA (h): sc-43374, KIF3A siRNA (m): sc-43375, KIF3A siRNA (r): sc-270301, KIF3A shRNA Plasmid (h): sc-43374-SH, KIF3A shRNA Plasmid (m): sc-43375-SH, KIF3A shRNA Plasmid (r): sc-270301-SH, KIF3A shRNA (h) Lentiviral Particles: sc-43374-V, KIF3A shRNA (m) Lentiviral Particles: sc-43375-V and KIF3A shRNA (r) Lentiviral Particles: sc-270301-V.

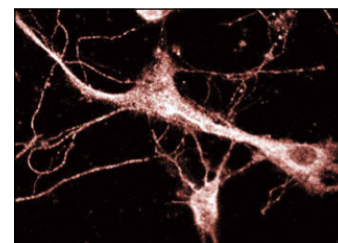
Molecular Weight of KIF3A: 77 kDa.

Positive Controls: rat brain extract: sc-2392.

DATA



KIF3A (28): sc-135960. Western blot analysis of KIF3A expression in rat brain tissue extract.



KIF3A (28): sc-135960. Immunofluorescence staining of rat neuron cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Makani, V., et al. 2013. Annexin A1 complex mediates oxytocin vesicle transport. *J. Neuroendocrinol.* 25: 1241-1254.
2. Yu, H., et al. 2016. Caffeine intake antagonizes salt sensitive hypertension through improvement of renal sodium handling. *Sci. Rep.* 6: 25746.

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 for detailed protocols and support products.