

KIF21A (H-105): sc-134592

BACKGROUND

The kinesin superfamily proteins (KIFs) are microtubule-dependent molecular motors that transport membranous organelles and protein complexes in a microtubule- and ATP-dependent manner. Cells use KIFs to tightly control the direction, destination, and speed of transportation of a variety of important functional molecules, including mRNA. KIF21A is a 1,674 amino acid protein that contains 3 characteristic kinesin domains: an N-terminal head motor domain, a coiled-coil stalk region and a C-terminal tail. KIF21A is expressed in all nervous system tissues. Missense mutations in the KIF21A gene lead to congenital fibrosis of the extraocular muscles type 1 (CFEOM1). CFEOM1 refers to a group of congenital eye movement disorders characterized by nonprogressive ophthalmoplegia that affects all of the extraocular muscles.

REFERENCES

1. Nakagawa, T., et al. 1997. Identification and classification of 16 new kinesin superfamily (KIF) proteins in mouse genome. *Proc. Natl. Acad. Sci. USA* 94: 9654-9659.
2. Miki, H., et al. 2001. All kinesin superfamily protein, KIF, genes in mouse and human. *Proc. Natl. Acad. Sci. USA* 98: 7004-7011.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608283. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Yamada, K., et al. 2003. Heterozygous mutations of the kinesin KIF21A in congenital extraocular muscles type 1 (CFEOM1). *Nat. Genet.* 35: 318-321.
6. Traboulsi, E. and Engle, E. 2004. Mutations in KIF21A are responsible for CFEOM1 worldwide. *Ophthalmic Genet.* 25: 237-239.
5. Tiab, L., et al. 2004. Mutation analysis of KIF21A in congenital fibrosis of the extraocular muscles (CFEOM) patients. *Ophthalmic Genet.* 25: 241-246.
7. Yamada, K., et al. 2005. A novel KIF21A mutation in a patient with congenital fibrosis of the extraocular muscles and Marcus Gunn jaw-winking phenomenon. *Arch. Ophthalmol.* 123: 1254-1259.
8. Shimizu, S., et al. 2005. Recurrent mutation of the KIF21A gene in Japanese patients with congenital fibrosis of the extraocular muscles. *Jpn. J. Ophthalmol.* 49: 443-447.
9. Zhang, X.Q., et al. 2006. Mutation p.Arg954Trp of KIF21A causes congenital fibrosis of the extraocular muscles in a Chinese family. *Yi Chuan Xue Bao* 33: 685-691.

CHROMOSOMAL LOCATION

Genetic locus: KIF21A (human) mapping to 12q12; Kif21a (mouse) mapping to 15 E3.

SOURCE

KIF21A (H-105) is a rabbit polyclonal antibody raised against amino acids 1136-1240 mapping within an internal region of KIF21A of human origin.

RESEARCH USE

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

PRODUCT

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

APPLICATIONS

KIF21A (H-105) is recommended for detection of KIF21A isoforms 1-4 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).

KIF21A (H-105) is also recommended for detection of KIF21A isoforms 1-4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for KIF21A siRNA (h): sc-60886, KIF21A siRNA (m): sc-60887, KIF21A shRNA Plasmid (h): sc-60886-SH, KIF21A shRNA Plasmid (m): sc-60887-SH, KIF21A shRNA (h) Lentiviral Particles: sc-60886-V and KIF21A shRNA (m) Lentiviral Particles: sc-60887-V.

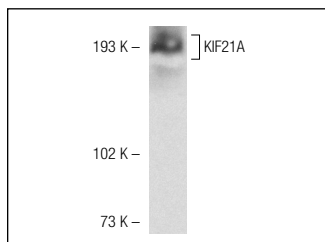
Molecular Weight of KIF21A: 187 kDa.

Positive Controls: rat brain extract: sc-2392.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



KIF21A (H-105): sc-134592. Western blot analysis of KIF21A expression in rat brain tissue extract.

STORAGE

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