SANTA CRUZ BIOTECHNOLOGY, INC.

KIF14 (K-15): sc-48561

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Kinesin is a cytoskeletal motor protein involved in axonal transport and cell division. 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. KIFs are involved in neuronal function and development. Kinesin family member 14 (KIF14) is an overexpressed potential oncogene in the 1q region of genomic gain in breast cancer cell lines associated with poor prognosis breast cancer. The gain of chromosome 1q likely reflects oncogene amplification. KIF14 is a potential therapeutic target and indicator of oncogenesis.

REFERENCES

1. Howard, J. 1996. The movement of kinesin along microtubules. Annu. Rev. Physiol. 58: 703-729.
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. Mburu, P., et al. 2003. Defects in Whirlin, a PDZ domain molecule involved in stereocilia elongation, cause deafness in the whirler mouse and families with DFNB31. Nat. Genet. 34: 421-428.
4. Zhu, C., et al. 2005. Functional analysis of human microtubule-based motor proteins, the kinesins and dyneins, in mitosis/cytokinesis using RNA interference. Mol. Biol. Cell 16: 3187-3199.
5. Corson, T.W., et al. 2005. KIF14 is a candidate oncogene in the 1q minimal region of genomic gain in multiple cancers. Oncogene 24: 4741-4753.
6. Corson, T.W. and Gallie, B.L. 2006. KIF14 mRNA expression is a predictor of grade and outcome in breast cancer. Int. J. Cancer 119: 1088-1094.
7. Gruneberg, U., et al. 2006. KIF14 and citron kinase act together to promote efficient cytokinesis. J. Cell Biol. 172: 363-372.
8. Carleton, M., et al. 2006. RNA interference-mediated silencing of mitotic kinesin KIF14 disrupts cell cycle progression and induces cytokinesis failure. Mol. Cell. Biol. 26: 3853-3863.

CHROMOSOMAL LOCATION

Genetic locus: KIF14 (human) mapping to 1q32.1; Kif14 (mouse) mapping to 1 E4.

SOURCE

KIF14 (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of KIF14 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-48561 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KIF14 (K-15) is recommended for detection of KIF14 of mouse 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).

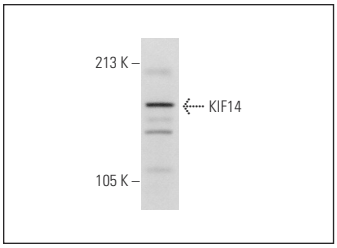
KIF14 (K-15) is also recommended for detection of KIF14 in additional species, including canine and avian.

Suitable for use as control antibody for KIF14 siRNA (h): sc-60882, KIF14 siRNA (m): sc-60883, KIF14 shRNA Plasmid (h): sc-60882-SH, KIF14 shRNA Plasmid (m): sc-60883-SH, KIF14 shRNA (h) Lentiviral Particles: sc-60882-V and KIF14 shRNA (m) Lentiviral Particles: sc-60883-V.

Molecular Weight of KIF14: 186 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206.

DATA



KIF14 (K-15): sc-48561. Western blot analysis of KIF14 expression in MCF7 whole cell lysate.

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.