SANTA CRUZ BIOTECHNOLOGY, INC.

KIFC1 (M-63): sc-100947

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. Individual kinesin members play crucial roles in cell division, intracellular transport and membrane trafficking events including endocytosis and transcytosis. KIFC1 (kinesin family member C1), also known as HSET or KNSL2 (kinesin-like protein 2), is a 673 amino acid protein that belongs to the kinesin-like family of proteins. KIFC1 localizes to the nucleus and contains a C-terminal kinesin-motor domain. Functioning as a minus-end directed microtubule-dependent motor, KIFC1 works together with NuMA and cytoplasmic Dynein to organize microtubule minus ends at spindle poles. HeLa cells deficient in KIFC1 exhibit multipolar mitotic spindles, suggesting that KIFC1 is essential for bipolar spindle formation.

REFERENCES

1. Hoyt, M.A., et al. 1993. Loss of function of *Saccharomyces cerevisiae* kinesin-related CIN8 and KIP1 is suppressed by KAR3 motor domain mutations. Genetics 135: 35-44.
2. Ando, A., et al. 1994. Cloning of a new kinesin-related gene located at the centromeric end of the human MHC region. Immunogenetics 39: 194-200.

CHROMOSOMAL LOCATION

Genetic locus: KIFC1 (human) mapping to 6p21.32.

SOURCE

KIFC1 (M-63) is a mouse monoclonal antibody raised against recombinant KIFC1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

KIFC1 (M-63) is recommended for detection of KIFC1 of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for KIFC1 siRNA (h): sc-95157, KIFC1 shRNA Plasmid (h): sc-95157-SH and KIFC1 shRNA (h) Lentiviral Particles: sc-95157-V.

Molecular Weight of KIFC1: 74 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

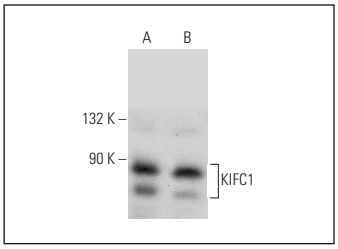
RESEARCH USE

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

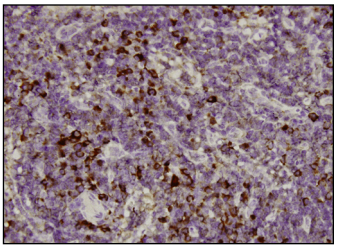
STORAGE

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

DATA



KIFC1 (M-63): sc-100947. Western blot analysis of KIFC1 expression in HeLa (**A**) and 293T (**B**) whole cell lysates.



KIFC1 (M-63): sc-100947. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lymph node tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Watts, C.A., et al. 2013. Design, synthesis, and biological evaluation of an allosteric inhibitor of HSET that targets cancer cells with supernumerary centrosomes. Chem. Biol. 20: 1399-1410.
2. Xu, P., et al. 2014. B56-PP2A regulates motor dynamics for mitotic chromosome alignment. J. Cell Sci. 127: 4567-4573.
3. Barr, A.R., et al. 2015. A sensitised RNAi screen reveals a ch-TOG genetic interaction network required for spindle assembly. Sci. Rep. 5: 10564.
4. Ogden, A., et al. 2017. Multi-institutional study of nuclear KIFC1 as a biomarker of poor prognosis in African American women with triple-negative breast cancer. Sci. Rep. 7: 42289.
5. Visochek, L., et al. 2017. Exclusive destruction of mitotic spindles in human cancer cells. Oncotarget 8: 20813-20824.
6. Choe, M.H., et al. 2018. Centrosome clustering is a tumor-selective target for the improvement of radiotherapy in breast cancer cells. Anticancer Res. 38: 3393-3400.
7. Visochek, L., et al. 2019. The phenanthrene derivative PJ34 exclusively eradicates human pancreatic cancer cells in xenografts. Oncotarget 10: 6269-6282.
8. Teng, K., et al. 2019. KIFC1 is activated by TCF-4 and promotes hepatocellular carcinoma pathogenesis by regulating HMGA1 transcriptional activity. J. Exp. Clin. Cancer Res. 38: 329.
9. Vukušic, K., et al. 2021. Microtubule-sliding modules based on kinesins EG5 and PRC1-dependent KIF4A drive human spindle elongation. Dev. Cell 56: 1253-1267.e10.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.