

## KLC1 (H-7): sc-515792



The Power to Question

## BACKGROUND

The kinesin family of motor proteins comprise at least two forms of conventional kinesin (kinesin-I). They are encoded by different genes and designated ubiquitous kinesin, which is expressed in all cells and tissues, and neuronal kinesin, which is expressed exclusively in neuronal cells. Conventional kinesin is a heterotetramer of two kinesin heavy chain subunits and two kinesin light chain subunits. While the kinesin heavy chain contains motor activity, evidence suggests that the kinesin light chain is involved in either modulation of kinesin heavy chain activity or in cargo binding. The motor protein kinesin is a heterotetramer composed of two heavy chains and two light chains. Kinesin motor activity is dependent on the presence of ATP and microtubules.

## REFERENCES

1. Vignali, G., Lizio, C., Sprocati, M.T., Sirtori, C., Battaglia, G. and Navone, F. 1997. Expression of neuronal kinesin heavy chain is developmentally regulated in the central nervous system of the rat. *J. Neurochem.* 69: 1840-1849.
2. Diefenbach, R.J., Mackay, J.P., Armati, P.J. and Cunningham, A.L. 1998. The C-terminal region of the stalk domain of ubiquitous human kinesin heavy chain contains the binding site for kinesin light chain. *Biochemistry* 37: 16663-16670.
3. Rahman, A., Friedman, D.S. and Goldstein, L.S. 1998. Two kinesin light chain genes in mice. Identification and characterization of the encoded proteins. *J. Biol. Chem.* 273: 15395-15403.
4. Rahman, A., Kamal, A., Roberts, E.A. and Goldstein, L.S. 1999. Defective kinesin heavy chain behavior in mouse kinesin light chain mutants. *J. Cell Biol.* 146: 1277-1288.
5. Vancoillie, G., Lambert, J., Mulder, A., Koerten, H.K., Mommaas, A.M., Van Oostveldt, P. and Naeyaert, J.M. 2000. Kinesin and kinectin can associate with the melanosomal surface and form a link with microtubules in normal human melanocytes. *J. Invest. Dermatol.* 114: 421-429.

## CHROMOSOMAL LOCATION

Genetic locus: KLC1 (human) mapping to 14q32.33; Klc1 (mouse) mapping to 12 F1.

## SOURCE

KLC1 (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 170-193 within an internal region of KLC1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

KLC1 (H-7) is recommended for detection of KLC1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for KLC1 siRNA (h): sc-43880, KLC1 siRNA (m): sc-43881, KLC1 shRNA Plasmid (h): sc-43880-SH, KLC1 shRNA Plasmid (m): sc-43881-SH, KLC1 shRNA (h) Lentiviral Particles: sc-43880-V and KLC1 shRNA (m) Lentiviral Particles: sc-43881-V.

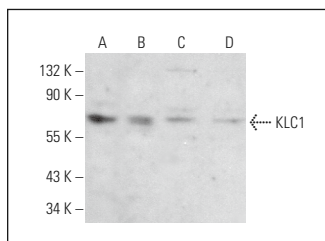
Molecular Weight of KLC1: 61 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, SK-N-SH cell lysate: sc-2410 or SH-SY5Y cell lysate: sc-3812.

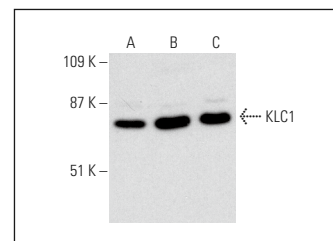
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



KLC1 (H-7): sc-515792. Western blot analysis of KLC1 expression in IMR-32 (A), BE (2)-M17 (B), C2C12 (C) and A-10 (D) whole cell lysates.



KLC1 (H-7): sc-515792. Western blot analysis of KLC1 expression in IMR-32 (A), SK-N-SH (B) and SH-SY5Y (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Holt, I., Fuller, H.R., Lam, L.T., Sewry, C.A., Shirran, S.L., Zhang, Q., Shanahan, C.M. and Morris, G.E. 2019. Nesprin-1-α2 associates with kinesin at myotube outer nuclear membranes, but is restricted to neuromuscular junction nuclei in adult muscle. *Sci. Rep.* 9: 14202.

## RESEARCH USE

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