

KLC2 siRNA (m): sc-146492

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. KLC2 (kinesin light chain 2) is a 622 amino acid protein that contains 6 TPR repeats and belongs to the kinesin light chain family. Existing in an oligomeric complex composed of two light and two heavy chain kinesin proteins, KLC2 plays a role in coupling organelle transport with ATPase activity. The gene encoding KLC2 maps to human chromosome 11, which houses over 1,400 genes and comprises nearly 4% of the human genome.

REFERENCES

1. Rahman, A., et al. 1998. Two kinesin light chain genes in mice. Identification and characterization of the encoded proteins. *J. Biol. Chem.* 273: 15395-15403.
2. Rahman, A., et al. 1999. Defective kinesin heavy chain behavior in mouse kinesin light chain mutants. *J. Cell Biol.* 146: 1277-1288.
3. Bowman, A.B., et al. 2000. Kinesin-dependent axonal transport is mediated by the sundry driver (SYD) protein. *Cell* 103: 583-594.
4. DeBoer, S.R., et al. 2008. Conventional kinesin holoenzymes are composed of heavy and light chain homodimers. *Biochemistry* 47: 4535-4543.
5. Takazawa, K., et al. 2008. Insulin-induced Glut4 movements in C2C12 myoblasts: evidence against a role of conventional kinesin motor proteins. *Kobe J. Med. Sci.* 54: E14-E22.

CHROMOSOMAL LOCATION

Genetic locus: Klc2 (mouse) mapping to 19 A.

PRODUCT

KLC2 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see KLC2 shRNA Plasmid (m): sc-146492-SH and KLC2 shRNA (m) Lentiviral Particles: sc-146492-V as alternate gene silencing products.

For independent verification of KLC2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-146492A, sc-146492B and sc-146492C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

KLC2 siRNA (m) is recommended for the inhibition of KLC2 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

KLC2 (F-11): sc-515506 is recommended as a control antibody for monitoring of KLC2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KLC2 gene expression knockdown using RT-PCR Primer: KLC2 (m)-PR: sc-146492-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wobst, H., et al. 2015. Kinesin-1 promotes post-Golgi trafficking of NCAM140 and NCAM180 to the cell surface. *J. Cell Sci.* 128: 2816-2829.

RESEARCH USE

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

PROTOCOLS

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