SANTA CRUZ BIOTECHNOLOGY, INC.

KLHL1 siRNA (h): sc-75393

BACKGROUND

KLHL1 (kelch-like protein 1) is a 748 amino acid protein that is the homolog of the *Drosophila* kelch protein. Localized to the cytoskeleton, KLHL1 contains six kelch repeats and one BTB (POZ) domain. The BTB (broad-complex, tramtrack and bric-a-brac) domain, also known as the POZ (poxvirus and zinc finger) domain, is an N-terminal homodimerization domain that contains multiple copies of kelch repeats and/or C_2H_2-type zinc fingers. KLHL1 is highly expressed in brain where it acts as an Actin-organization protein, possibly playing a role in the modulation of neurite outgrowth. KLHL1 expression has been shown to be downregulated by spinocerebellar ataxia type 8 (SCA8) protein, which then leads to SCA8 neuropathogenesis, a disease that is characterized by limb and truncal ataxia, ataxic dysarthria and horizontal nystagmus.

REFERENCES

1. Nemes, J.P., et al. 2000. The SCA8 transcript is an antisense RNA to a brain-specific transcript encoding a novel Actin-binding protein (KLHL1). Hum. Mol. Genet. 9: 1543-1551.
2. Melnick, A., et al. 2000. In-depth mutational analysis of the promyelocytic leukemia zinc finger BTB/POZ domain reveals motifs and residues required for biological and transcriptional functions. Mol. Cell. Biol. 20: 6550-6567.
3. Adams, J., et al. 2000. The kelch repeat superfamily of proteins: propellers of cell function. Trends Cell Biol. 10: 17-24.
4. Prag, S. and Adams, J.C. 2003. Molecular phylogeny of the kelch-repeat superfamily reveals an expansion of BTB/kelch proteins in animals. BMC Bioinformatics 4: 42.
5. He, Y., et al. 2006. Targeted deletion of a single Sca8 ataxia locus allele in mice causes abnormal gait, progressive loss of motor coordination, and Purkinje cell dendritic deficits. J. Neurosci. 26: 9975-9982.

CHROMOSOMAL LOCATION

Genetic locus: KLHL1 (human) mapping to 13q21.33.

PRODUCT

KLHL1 siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see KLHL1 shRNA Plasmid (h): sc-75393-SH and KLHL1 shRNA (h) Lentiviral Particles: sc-75393-V as alternate gene silencing products.

For independent verification of KLHL1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-75393A, sc-75393B and sc-75393C.

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.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

KLHL1 siRNA (h) is recommended for the inhibition of KLHL1 expression in human 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 µM in 66 µl. 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

KLHL1 (3A8B3): sc-517225 is recommended as a control antibody for monitoring of KLHL1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KLHL1 gene expression knockdown using RT-PCR Primer: KLHL1 (h)-PR: sc-75393-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.