SANTA CRUZ BIOTECHNOLOGY, INC.

FHL-2 siRNA (h): sc-37891

BACKGROUND

The four-and-a-half-LIM domain (FHL) proteins include FHL-1 (SLIM1), FHL-2 (SLIM3), FHL-3 (SLIM2) and FHL-4. The signature "half-domain", a single zinc finger domain located in the N-terminal region, differentiates FHLs from other LIM-only proteins, which have numbers of zinc fingers. Specific combinations of FHL proteins elicit selective activation of both CREB and CREM. Skeletal and cardiac muscle express FHL-1 in high levels as compared to the low level of expression in smooth muscle of the colon, small intestine and prostate. FHL-1 localizes to the cytosol of myoblasts, myotubes, and differentiated myocytes. FHL-2 is also located in cardiac and skeletal muscle, as well as in placenta and ovary tissues. FHL-3 is found in skeletal muscle, but absent in cardiac muscle. FHL-4 is expressed exclusively by the seminiferous epithelium of the testis, which suggests that FHL-4 is involved in spermatogenesis. The genetic loci for FHLs vary considerably despite similiar amino acid sequences among the FHL group.

REFERENCES

1. Morgan, M.J., et al. 1996. Slim defines a novel family of LIM-proteins expressed in skeletal muscle. Biochem. Biophys. Res. Commun. 225: 632-638.
2. Chan, K.K., et al. 1998. Molecular cloning and characterization of FHL2, a novel LIM domain protein preferentialy expressed in human heart. Gene 210: 345-350.

CHROMOSOMAL LOCATION

Genetic locus: FHL2 (human) mapping to 2q12.1.

PRODUCT

FHL-2 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 FHL-2 shRNA Plasmid (h): sc-37891-SH and FHL-2 shRNA (h) Lentiviral Particles: sc-37891-V as alternate gene silencing products.

For independent verification of FHL-2 (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-37891A, sc-37891B and sc-37891C.

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

FHL-2 siRNA (h) is recommended for the inhibition of FHL-2 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

FHL-2 (F-1): sc-393514 is recommended as a control antibody for monitoring of FHL-2 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-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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FHL-2 gene expression knockdown using RT-PCR Primer: FHL-2 (h)-PR: sc-37891-PR (20 µl, 416 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Mille, F., et al. 2009. The patched dependence receptor triggers apoptosis through a DRAL-caspase-9 complex. Nat. Cell Biol. 11: 739-746.
2. Li, S.Y., et al. 2015. Four-and-a-half LIM domains protein 2 is a coactivator of Wnt signaling in diabetic kidney disease. J. Am. Soc. Nephrol. 26: 3072-3084.
3. Sun, L., et al. 2018. FHL2 interacts with EGFR to promote glioblastoma growth. Oncogene 37: 1386-1398.
4. Li, S.Y., et al. 2019. FHL2 mediates podocyte Rac1 activation and foot process effacement in hypertensive nephropathy. Sci. Rep. 9: 6693.
5. Chen, C.Y., et al. 2020. Deletion of the FHL2 gene attenuates intima-media thickening in a partially ligated carotid artery ligated mouse model. J. Cell. Mol. Med. 24: 160-173.

RESEARCH USE

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