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KLF15 siRNA (h): sc-45567

BACKGROUND

KLF15, KLF6 and KLF3 are Krüppel-like zinc finger-containing transcription factors. KLF15, a kidney-enriched Krüppel-like factor, is a transcriptional activator that binds the CLCNKA promoter. KLF6 (also designated Zf9 or CPBP, for core promoter-binding protein) is rapidly induced during hepatic stellate cell activation and transactivates a reporter gene driven by the Collagen I promoter, suggesting that KLF6 plays a role in the response to tissue injury. KLF3 may play a role in hematopoiesis. KLF15, which is a nuclear protein, is expressed primarily in liver, heart, skeletal muscle and kidney tissues but is not detected in lymphoid tissues or bone marrow. It is an important regulator of Glut4 in both adipose and muscle tissues.

REFERENCES

- Gray, S., et al. 2002. The Krüppel-like factor KLF15 regulates the Insulin-sensitive glucose transporter Glut4. *J. Biol. Chem.* 277: 34322-34328.
- Otteson, D.C., et al. 2004. Krüppel-like factor 15, a zinc-finger transcriptional regulator, represses the rhodopsin and interphotoreceptor retinoid-binding protein promoters. *Invest. Ophthalmol. Vis. Sci.* 45: 2522-2530.
- Otteson, D.C., et al. 2005. Zinc-finger domains of the transcriptional repressor KLF15 bind multiple sites in rhodopsin and IRBP promoters including the CRS-1 and G-rich repressor elements. *BMC Mol. Biol.* 6: 15.
- Mori, T., et al. 2005. Role of Krüppel-like factor 15 (KLF15) in transcriptional regulation of adipo-genesis. *J. Biol. Chem.* 280: 12867-12875.
- Teshigawara, K., et al. 2005. Role of Krüppel-like factor 15 in PEPCCK gene expression in the liver. *Biochem. Biophys. Res. Commun.* 327: 920-926.

CHROMOSOMAL LOCATION

Genetic locus: KLF15 (human) mapping to 3q21.3.

PRODUCT

KLF15 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see KLF15 shRNA Plasmid (h): sc-45567-SH and KLF15 shRNA (h) Lentiviral Particles: sc-45567-V as alternate gene silencing products.

For independent verification of KLF15 (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-45567A, sc-45567B and sc-45567C.

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

KLF15 siRNA (h) is recommended for the inhibition of KLF15 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 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

KLF15 (A-5): sc-271675 is recommended as a control antibody for monitoring of KLF15 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 KLF15 gene expression knockdown using RT-PCR Primer: KLF15 (h)-PR: sc-45567-PR (20 μ l, 541 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Dmitriev, P., et al. 2011. The Krüppel-like factor 15 as a molecular link between myogenic factors and a chromosome 4q transcriptional enhancer implicated in facioscapulohumeral dystrophy. *J. Biol. Chem.* 286: 44620-44631.
- Yu, M.Y., et al. 2020. Krüppel-like factor 15 is a key suppressor of podocyte fibrosis under rotational force-driven pressure. *Exp. Cell Res.* 386: 111706.

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.