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KLF15 shRNA (h) Lentiviral Particles: sc-45567-V

BACKGROUND

KLF15, KLF6 and KLF3 are Kuppel-like zinc finger-containing transcription factors. KLF15, a kidney-enriched Kuppel-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

1. Gray, S., et al. 2002. The Kuppel-like factor KLF15 regulates the Insulin-sensitive glucose transporter GLUT4. *J. Biol. Chem.* 277: 34322-34328.
2. Otteson, D.C., et al. 2004. Kuppel-like factor 15, a zinc-finger transcriptional regulator, represses the rhodopsin and interphotoreceptor retinoid-binding protein promoters. *Invest. Ophthalmol. Vis. Sci.* 45: 2522-2530.
3. 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.
4. Mori, T., et al. 2005. Role of Kuppel-like factor 15 (KLF15) in transcriptional regulation of adipogenesis. *J. Biol. Chem.* 280: 12867-12875.
5. Teshigawara, K., et al. 2005. Role of Kuppel-like factor 15 in PEPCK gene expression in the liver. *Biochem.* 327: 920-926.

CHROMOSOMAL LOCATION

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

PRODUCT

KLF15 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see KLF15 siRNA (h): sc-45567 and KLF15 shRNA Plasmid (h): sc-45567-SH as alternate gene silencing products.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

PROTOCOLS

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

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

APPLICATIONS

KLF15 shRNA (h) Lentiviral Particles is recommended for the inhibition of KLF15 expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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). Annealing temperature for the primers should be $55-60^{\circ}$ C and the extension temperature should be $68-72^{\circ}$ C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.