

KLF16 siRNA (m): sc-146498

BACKGROUND

Krüppel-like factors (KLFs) comprise a family of evolutionarily conserved zinc finger-containing transcription factors with diverse regulatory functions in cell growth, proliferation, differentiation and embryogenesis. Individual members of the Sp1-like/KLF family can function either as activators or repressors, depending on which promoter they bind and which coregulators they interact with. KLF16 (Krüppel-like factor 16), also known as BTEB4, DRRF (dopamine receptor-regulating factor) or NSLP2, is a 252 amino acid protein that contains three C₂H₂-type zinc fingers and belongs to the KLF transcription factor family. Localized to the nucleus and expressed at high levels in brain, KLF16 functions as a transcription factor that binds specifically to GT and GC boxes, displacing the transcription factors Sp1 and Sp3 and effectively modulating dopaminergic transmission in the brain.

REFERENCES

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3. Kaczynski, J.A., et al. 2002. Functional analysis of basic transcription element (BTE)-binding protein (BTEB) 3 and BTEB4, a novel Sp1-like protein, reveals a subfamily of transcriptional repressors for the BTE site of the cytochrome P4501A1 gene promoter. *Biochem. J.* 366: 873-882.
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6. Lee, S.H., et al. 2003. Genomic organization and promoter characterization of the murine dopamine receptor regulating factor (DRRF) gene. *Gene* 304: 193-199.
7. Chiambaretta, F., et al. 2004. Cell and tissue specific expression of human Krüppel-like transcription factors in human ocular surface. *Mol. Vis.* 10: 901-909.
8. Gutiérrez-Aguilar, R., et al. 2007. Analysis of KLF transcription factor family gene variants in type 2 diabetes. *BMC Med. Genet.* 8: 53.
9. Parker-Katiraei, L., et al. 2007. Identification of the imprinted KLF14 transcription factor undergoing human-specific accelerated evolution. *PLoS Genet.* 3: e65.

CHROMOSOMAL LOCATION

Genetic locus: Klf16 (mouse) mapping to 10 C1.

PROTOCOLS

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

PRODUCT

KLF16 siRNA (m) is a pool of 2 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 KLF16 shRNA Plasmid (m): sc-146498-SH and KLF16 shRNA (m) Lentiviral Particles: sc-146498-V as alternate gene silencing products.

For independent verification of KLF16 (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-146498A and sc-146498B.

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

KLF16 siRNA (m) is recommended for the inhibition of KLF16 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KLF16 gene expression knockdown using RT-PCR Primer: KLF16 (m)-PR: sc-146498-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. Man, B., et al. 2022. Berberine attenuates diabetic atherosclerosis via enhancing the interplay between KLF16 and PPAR α in ApoE^{-/-} mice. *Biochem. Biophys. Res. Commun.* 624: 59-67.

RESEARCH USE

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