

FO XK1 siRNA (m): sc-60658

BACKGROUND

The FOX family of transcription factors share a common DNA binding domain termed a winged-helix or forkhead domain. Many FOX proteins play important roles in development, metabolism, cancer and aging. In skeletal muscles, undifferentiated myogenic stem cells (satellite cells) can mobilize to regenerate myofibers in response to injury. FOXK1 is expressed in these cells and regulates cell cycle progression through an interaction with its downstream target, the cyclin-dependent kinase inhibitor p21 (CIP). Loss of FOXK1 in mice results in growth retardation and a severe impairment in skeletal muscle regeneration following injury. FOXK1 also shows expression in immature tissues of brain, eye, heart, lung and thymus. It also is predominantly expressed in many malignant tissues, such as tumors of the brain, colon and lymph node.

REFERENCES

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4. Zhang, Q., et al. 2002. The gene for the muted μ mouse, a model for Hermansky-Pudlak syndrome, defines a novel protein which regulates vesicle trafficking. *Hum. Mol. Genet.* 11: 697-706.
5. Hawke, T.J., et al. 2003. Absence of p21^{CIP} rescues myogenic progenitor cell proliferative and regenerative capacity in FOXK1 null mice. *J. Biol. Chem.* 278: 4015-4020.
6. Huang, J.T. and Lee, V. 2004. Identification and characterization of a novel human FOXK1 gene in silico. *Int. J. Oncol.* 25: 751-757.
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CHROMOSOMAL LOCATION

Genetic locus: Foxk1 (mouse) mapping to 5 G2.

PRODUCT

FOXK1 siRNA (m) 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 FOXK1 shRNA Plasmid (m): sc-60658-SH and FOXK1 shRNA (m) Lentiviral Particles: sc-60658-V as alternate gene silencing products.

For independent verification of FOXK1 (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-60658A, sc-60658B and sc-60658C.

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 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

FOXK1 siRNA (m) is recommended for the inhibition of FOXK1 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 FOXK1 gene expression knockdown using RT-PCR Primer: FOXK1 (m)-PR: sc-60658-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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