



TSSK 1 siRNA (m): sc-154740

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. TSSK 1 (testis-specific serine/threonine-protein kinase 1), also known as STK22a or TSK-1, is a 364 amino acid protein that contains one protein kinase domain and belongs to the Ser/Thr protein kinase family. Using magnesium as a cofactor, TSSK 1 catalyzes the ATP-dependent phosphorylation of target proteins and is thought to be involved in the late stages of spermatogenesis during the reconstruction of the cytoplasm. TSSK 1 is activated by phosphorylation on Thr 174, possibly by autophosphorylation, and binds to TSSK 2. Localized to the cytoplasm, TSSK 1 is only expressed in spermatids in the final stages of cytodifferentiation in the seminiferous tubules.

REFERENCES

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2. Kueng, P., et al. 1997. A novel family of serine/threonine kinases participating in spermiogenesis. *J. Cell Biol.* 139: 1851-1859.
3. Sutherland, H.F., et al. 1998. Cloning and comparative mapping of the DiGeorge syndrome critical region in the mouse. *Genomics* 52: 37-43.
4. Lindsay, E.A., et al. 1998. ES2, a gene deleted in DiGeorge syndrome, encodes a nuclear protein and is expressed during early mouse development, where it shares an expression domain with a Goosecoid-like gene. *Hum. Mol. Genet.* 7: 629-635.
5. Nayak, S., et al. 1998. Immunohistochemical analysis of the expression of two serine-threonine kinases in the maturing mouse testis. *Mech. Dev.* 74: 171-174.
6. Zuercher, G., et al. 2000. A novel member of the testis specific serine kinase family, TSSK 3, expressed in the Leydig cells of sexually mature mice. *Mech. Dev.* 93: 175-177.

CHROMOSOMAL LOCATION

Genetic locus: Tssk1 (mouse) mapping to 16 A3.

PRODUCT

TSSK 1 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 TSSK 1 shRNA Plasmid (m): sc-154740-SH and TSSK 1 shRNA (m) Lentiviral Particles: sc-154740-V as alternate gene silencing products.

For independent verification of TSSK 1 (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-154740A, sc-154740B and sc-154740C.

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

TSSK 1 siRNA (m) is recommended for the inhibition of TSSK 1 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 TSSK 1 gene expression knockdown using RT-PCR Primer: TSSK 1 (m)-PR: sc-154740-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.

PROTOCOLS

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