SANTA CRUZ BIOTECHNOLOGY, INC.

# TSSK 1B siRNA (h): sc-91685

## 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 1B (testis-specific serine/threonine-protein kinase 1B) in human and designated TSSK 1 in mice, also known as STK22a or TSK-1, is a 367 amino acid protein that contains one protein kinase domain and belongs to the Ser/Thr protein kinase family. Using magnesium as a cofactor, TSSK 1B 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 1B is activated by phosphorylation on Thr 174, possibly by autophosphorylation, and binds to TSSK 2. Localized to the cytoplasm, TSSK 1B is only expressed in spermatids in the final stages of cytodifferentiation in the seminiferous tubules.

## REFERENCES


1. Hanks, S.K., et al. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. Science 241: 42-52.
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: TSSK1B (human) mapping to 5q22.2.

## PRODUCT

TSSK 1B 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TSSK 1B shRNA Plasmid (h): sc-91685-SH and TSSK 1B shRNA (h) Lentiviral Particles: sc-91685-V as alternate gene silencing products.

For independent verification of TSSK 1B (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-91685A, sc-91685B and sc-91685C.

## 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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

TSSK 1B siRNA (h) is recommended for the inhibition of TSSK 1B 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 µM in 66 µl. 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

TSSK 1B (NQ-A36): sc-135590 is recommended as a control antibody for monitoring of TSSK 1B 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 TSSK 1B gene expression knockdown using RT-PCR Primer: TSSK 1B (h)-PR: sc-91685-PR (20 µl). 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.