

# TULP1 siRNA (h): sc-106862

## BACKGROUND

Mutations in the mouse *Tub* gene gradually lead to obesity, strongly resembling the late-onset obesity observed in the human population. In addition to excessive deposition of adipose tissue, mice with the *Tub* phenotype also suffer retinal degeneration and neurosensory hearing loss. A human homolog of the *Tub* gene has been identified, as have three related proteins, called Tubby-like protein 1 (TULP1), TULP2 and TULP3. When compared to TULP1 and TULP2, TULP3 has a wider tissue expression and is phylogenetically more similar to *Tub* than either TULP1 or TULP2. TULP1, expressed specifically in the retina, maps to the chromosomal region known to be involved in retinitis pigmentosa, while TULP2 maps within the minimal interval for the rod-cone dystrophy. TULP3 maps to human chromosome 12p13.33 and shares 69% homology to mouse TULP3. Human RNA from testis, ovary, thyroid and spinal cord contain highly detectable levels of TULP3 transcripts. In the retina, TULP3 is expressed specifically in the inner nuclear layer and ganglion cell layer. TULP1, TULP2 and TULP3 may comprise a unique family of bipartite transcription factors.

## REFERENCES

1. Ohlemiller, K.K., et al. 1995. Cochlear and retinal degeneration in the Tubby mouse. *Neuroreport* 6: 845-849.
2. Noben-Trauth, K., et al. 1996. A candidate gene for the mouse mutation Tubby. *Nature* 380: 534-538.
3. North, M.A., et al. 1997. Molecular characterization of *Tub*, TULP1, and TULP2, members of the novel Tubby gene family and their possible relation to ocular diseases. *Proc. Natl. Acad. Sci. USA* 94: 3128-3133.
4. Hagstrom, S.A., et al. 1998. Recessive mutations in the gene encoding the Tubby-like protein TULP1 in patients with retinitis pigmentosa. *Nat. Genet.* 18: 174-176.

## CHROMOSOMAL LOCATION

Genetic locus: TULP1 (human) mapping to 6p21.31.

## PRODUCT

TULP1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TULP1 shRNA Plasmid (h): sc-106862-SH and TULP1 shRNA (h) Lentiviral Particles: sc-106862-V as alternate gene silencing products.

For independent verification of TULP1 (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-106862A, sc-106862B and sc-106862C.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

TULP1 siRNA (h) is recommended for the inhibition of TULP1 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  $\mu$ M in 66  $\mu$ 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 TULP1 gene expression knockdown using RT-PCR Primer: TULP1 (h)-PR: sc-106862-PR (20  $\mu$ l, 544 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.