SANTA CRUZ BIOTECHNOLOGY, INC.

TULP1 siRNA (m): sc-77391

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, 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. Gu, S., et al. 1998. Tubby-like protein-1 mutations in autosomal recessive retinitis pigmentosa. Lancet 351: 1103-1104.
5. 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.
6. Banerjee, P., et al. 1998. TULP1 mutation in two extended Dominican kindreds with autosomal recessive retinitis pigmentosa. Nat. Genet. 18: 177-179.

CHROMOSOMAL LOCATION

Genetic locus: Tulp1 (mouse) mapping to 17 A3.3.

PRODUCT

TULP1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TULP1 shRNA Plasmid (m): sc-77391-SH and TULP1 shRNA (m) Lentiviral Particles: sc-77391-V as alternate gene silencing products.

For independent verification of TULP1 (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-77391A, sc-77391B and sc-77391C.

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

TULP1 siRNA (m) is recommended for the inhibition of TULP1 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TULP1 gene expression knockdown using RT-PCR Primer: TULP1 (m)-PR: sc-77391-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 or our catalog for detailed protocols and support products.