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Tub siRNA (h): sc-44176

BACKGROUND

In contrast to the rapid early-onset weight gain seen in ob/ob mice, mutations in the Tub gene lead to obesity gradually and strongly resemble late-onset obesity as seen in the human population. In addition to excessive deposition of adipose tissue, mice with the Tubby phenotype also suffer retinal degeneration and neurosensory hearing loss. The tripartite character of Tubby phenotype is strikingly similar to human obesity syndromes such as Alström and Bardet-Biedl. A candidate for the Tub gene has been described. A G→T transversion in this candidate gene eliminates a donor splice site in the 3' coding region resulting in a larger transcript containing an unspliced intron. A second prematurely truncated mRNA transcript with the unspliced intron was found to be expressed in the brains of Tubby mice at a 2-3 fold higher rate as compared to B6 mice. It has been postulated that the phenotypic features of Tubby mice can be attributed to cellular apoptosis triggered by the expression of a mutated Tub gene.

REFERENCES

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4. Heckenlively, J.R., Chang, B., Erway, L.C., Peng, C., Hawes, N.L., Hageman, G.S. and Roderick, T.H. 1995. Mouse model for Usher syndrome: linkage mapping suggests homology to Usher type I reported at human chromosome 11p15. *Proc. Natl. Acad. Sci. USA* 92: 11100-11104.
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6. Noben-Trauth, K., Naggert, J.K., North, M.A. and Nishina, P.M. 1996. A candidate gene for the mouse mutation Tubby. *Nature* 380: 534-538.

CHROMOSOMAL LOCATION

Genetic locus: TUB (human) mapping to 11p15.4.

PRODUCT

ub 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Tub shRNA Plasmid (h): sc-44176-SH and Tub shRNA (h) Lentiviral Particles: sc-44176-V as alternate gene silencing products.

For independent verification of Tub (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-44176A, sc-44176B and sc-44176C.

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

Tub siRNA (h) is recommended for the inhibition of Tub 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 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.

GENE EXPRESSION MONITORING

Tub (40): sc-136112 is recommended as a control antibody for monitoring of Tub 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Tub gene expression knockdown using RT-PCR Primer: Tub (h)-PR: sc-44176-PR (20 μ l, 576 bp). 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.