

Treacle siRNA (h): sc-61707

BACKGROUND

Treacle is a serine/alanine-rich 1,411 amino acid nuclear phosphoprotein that interacts with upstream binding factor (UBF) and affects transcription of the ribosomal DNA gene. Treacle is also involved in early embryonic development, particularly in the craniofacial complex, and may play a role in nucleolar-cytoplasmic transport. The Treacle protein contains three domains with unique N- and C-termini and a large central repeat domain. Mutations in TCOF1, the gene that encodes for Treacle, cause Treacher Collins-Franceschetti syndrome (TCS), a disorder characterized by defects in craniofacial development. Symptoms of TCS include conductive hearing loss, hypoplasia of the mandible and maxilla, downward sloping palpebral fissures and cleft palate.

REFERENCES

1. So, R.B., et al. 2004. Another face of the Treacher Collins syndrome (TCOF1) gene: identification of additional exons. *Gene* 328: 49-57.
2. Thiel, C.T., et al. 2005. Exclusion of TCOF1 mutations in a case of bilateral Goldenhar syndrome and one familial case of microtia with meatal atresia. *Clin. Dysmorphol.* 14: 67-71.
3. Splendore, A., et al. 2005. TCOF1 mutation database: novel mutation in the alternatively spliced exon 6A and update in mutation nomenclature. *Hum. Mutat.* 25: 429-434.
4. Knutson, M.D., et al. 2005. Iron release from macrophages after erythrophagocytosis is upregulated by ferroportin 1 overexpression and down-regulated by hepcidin. *Proc. Natl. Acad. Sci. USA* 102: 1324-1328.

CHROMOSOMAL LOCATION

Genetic locus: TCOF1 (human) mapping to 5q32.

PRODUCT

Treacle 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 Treacle shRNA Plasmid (h): sc-61707-SH and Treacle shRNA (h) Lentiviral Particles: sc-61707-V as alternate gene silencing products.

For independent verification of Treacle (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-61707A, sc-61707B and sc-61707C.

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

Treacle siRNA (h) is recommended for the inhibition of Treacle 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

Treacle (H-6): sc-374536 is recommended as a control antibody for monitoring of Treacle 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 Treacle gene expression knockdown using RT-PCR Primer: Treacle (h)-PR: sc-61707-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Velichko, A.K., et al. 2019. Hypoosmotic stress induces R loop formation in nucleoli and ATR/ATM-dependent silencing of nucleolar transcription. *Nucleic Acids Res.* 47: 6811-6825.
2. Castoldi, F., et al. 2020. Autophagy-mediated metabolic effects of aspirin. *Cell Death Discov.* 6: 129.
3. Sochacka, M., et al. 2022. FGF12 is a novel component of the nucleolar NOLC1/TCOF1 ribosome biogenesis complex. *Cell Commun. Signal.* 20: 182.

RESEARCH USE

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