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TARSL1 siRNA (m): sc-154074

BACKGROUND

TARSL1, also known as TARS2 (threonyl-tRNA synthetase 2, mitochondrial) or ThrRS (threonine—tRNA ligase), is a 718 amino acid mitochondrial matrix protein that belongs to the class-II aminoacyl-tRNA synthetase family. The gene encoding TARSL1 maps to human chromosome 1q21.3. Chromosome 1 is the largest human chromosome spanning approximately 260 million base pairs, 3,000 genes, and making up 8% of the human genome. The rare aging disease Hutchinson-Gilford progeria is associated with the LMNA gene located on chromosome 1. When defective, the LMNA gene product can build up in the nucleus and cause characteristic nuclear blebs. The MUTYH gene, also located on chromosome 1, is partially responsible for familial adenomatous polyposis. Stickler syndrome, Parkinsons, Gaucher disease and Usher syndrome are also associated with chromosome 1. A breakpoint has been identified in 1q which disrupts the DISC1 gene and is linked to schizophrenia. Aberrations in chromosome 1 are found in a variety of cancers including head and neck cancer, malignant melanoma and multiple myeloma.

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CHROMOSOMAL LOCATION

Genetic locus: Tars2 (mouse) mapping to 3 F2.1.

PRODUCT

TARSL1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TARSL1 shRNA Plasmid (m): sc-154074-SH and TARSL1 shRNA (m) Lentiviral Particles: sc-154074-V as alternate gene silencing products.

For independent verification of TARSL1 (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-154074A, sc-154074B and sc-154074C.

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

TARSL1 siRNA (m) is recommended for the inhibition of TARSL1 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TARSL1 gene expression knockdown using RT-PCR Primer: TARSL1 (m)-PR: sc-154074-PR (20 μ l). 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.