SANTA CRUZ BIOTECHNOLOGY, INC.

Tim10 siRNA (h): sc-41255

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The Power to Question

BACKGROUND

The majority of mitochondrial-directed proteins are encoded by the nuclear genome and are transported to the mitochondria via regulated processes involving the mitochondrial Tom and Tim proteins. The mitochondrial Tim protein family is comprised of a large group of evolutionarily conserved proteins that are found in most eukaryotes. Import of nuclear-encoded precursor proteins into and across the mitochondrial inner membrane is mediated by two distinct complexes, the Tim23 complex and the Tim22 compex, which differ in their substrate specificity. Defects in Tim proteins are implicated in several neuro-degenerative diseases, suggesting important roles for Tim proteins in development and health. Tim10, which maps to human chromosome 11q12.1, forms heteromeric complexes with Tim9 and Tim12. One complex contains Tim9 and Tim10, which cross-links to the carboxy-terminal domain of Tim23. The carboxy-terminal domain of Tim23 carries all the targeting signals for Tim23, suggesting important role for the Tim9-Tim10 complex in Tim23 import. The other complex contains Tim9, Tim10 and Tim12, which associates with Tim22.

REFERENCES

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6. Bauer, M.F. and Neupert, W. 2001. Import of proteins into mitochondria: a novel pathomechanism for progressive neurodegeneration. J. Inherit. Metab. Dis. 24: 166-180.
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CHROMOSOMAL LOCATION

Genetic locus: TIMM10 (human) mapping to 11q12.1.

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.

PRODUCT

Tim10 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Tim10 shRNA Plasmid (h): sc-41255-SH and Tim10 shRNA (h) Lentiviral Particles: sc-41255-V as alternate gene silencing products.

For independent verification of Tim10 (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-41255A, sc-41255B and sc-41255C.

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

Tim10 siRNA (h) is recommended for the inhibition of Tim10 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 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.

GENE EXPRESSION MONITORING

Tim10 (C-7): sc-518241 is recommended as a control antibody for monitoring of Tim10 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 Tim10 gene expression knockdown using RT-PCR Primer: Tim10 (h)-PR: sc-41255-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.