SANTA CRUZ BIOTECHNOLOGY, INC.

MATH-5 siRNA (h): sc-90754

BACKGROUND

The *Drosophila* atonal gene produces a protein with basic helix loop helix (bHLH) domains that plays an essential role in the development of the *Drosophila* nervous system. Mammalian atonal homolog 1 (MATH-1) is a helix-loop-helix (HLH) transcription factor that is structurally homologous to the product of the *Drosophila* proneural gene atonal. MATH-5, also known as bHLHa13 or ATOH7, is a 152 nuclear protein containing one basic helix-loop-helix (bHLH) domain. A member of the bHLH family of proteins, MATH-5 functions as a transcription factor and is involved in the differentiation of retinal ganglion cells. Beginning at embryonic day 11.5 of mice, MATH-5 is expressed in the developing optic cup in a temporal and spatial pattern that coincides with retinal ganglion cell formation. Mutations in the gene encoding MATH-5 may be associated with optic nerve aplasia and related clinical syndromes.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: ATOH7 (human) mapping to 10q21.3.

PRODUCT

MATH-5 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 MATH-5 shRNA Plasmid (h): sc-90754-SH and MATH-5 shRNA (h) Lentiviral Particles: sc-90754-V as alternate gene silencing products.

For independent verification of MATH-5 (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-90754A, sc-90754B and sc-90754C.

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

MATH-5 siRNA (h) is recommended for the inhibition of MATH-5 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MATH-5 gene expression knockdown using RT-PCR Primer: MATH-5 (h)-PR: sc-90754-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 for detailed protocols and support products.