



Microcephalin siRNA (m): sc-61043

BACKGROUND

Microcephalin (MCPH1, BRCT-repeat inhibitor of TERT expression 1, BRIT1) modulates brain size and has been proliferating under strong positive selection for several thousand years, although the nature of the positive selection is poorly understood. Human Microcephalin contains three BRCA1 C-terminal (BRCT) domains and shares 57% identity with its mouse ortholog, the most conserved regions being BRCT domains where there is 80% identity. Predominant expression of human Microcephalin is observed in fetal brain, liver and kidney tissues and is expressed during neurogenesis in mice. Microcephalin displays significantly higher rates of protein evolution in primates than in rodents; this trend is most noticeable for the subset of genes associated with nervous system development. Microcephalin has a very young, single nucleotide, polymorphism haplotype associated with modern humans; this gene is presumably still evolving in *Homo sapiens*. It functions in DNA damage response and regulation of cell cycle checkpoints.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: Mcph1 (mouse) mapping to 8 A1.3.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

Microcephalin 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 Microcephalin shRNA Plasmid (m): sc-61043-SH and Microcephalin shRNA (m) Lentiviral Particles: sc-61043-V as alternate gene silencing products.

For independent verification of Microcephalin (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-61043A, sc-61043B and sc-61043C.

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

Microcephalin siRNA (m) is recommended for the inhibition of Microcephalin 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 Microcephalin gene expression knockdown using RT-PCR Primer: Microcephalin (m)-PR: sc-61043-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.