



MTCL1 siRNA (h): sc-75383

BACKGROUND

MTCL1 (microtubule cross-linking factor 1), also known as CCDC165 (coiled-coil domain-containing protein 165), SOGA2 or KIAA0802, is a 1,905 amino acid protein that localizes to the cell membrane, cytoplasm and cytoskeleton. MTCL1 is a microtubule-associated factor that plays a role in regulating polarization and microtubule dynamics as well as the development and maintenance of non-centrosomal microtubule bundles. MTCL1 is encoded by a gene that maps to chromosome 18p11.22 and is expressed as four isoforms due to alternative splicing events. Chromosome 18 encodes over 300 genes and contains about 76 million bases. Trisomy 18, or Edwards syndrome, is the second most common trisomy after Down syndrome. Symptoms of Edwards syndrome include low birth weight, a variety of physical development defects, heart deformations and breathing difficulty. Translocation between chromosome 18 and 14 is the most common translocation in cancers, and occurs in follicular lymphomas. Niemann-Pick disease, hereditary hemorrhagic telangiectasia and erythropoietic protoporphyria are associated with chromosome 18. The TGF β modulators, Smad2, Smad4 and Smad7 are encoded by chromosome 18.

REFERENCES

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2. Grosso, S., et al. 2005. Chromosome 18 aberrations and epilepsy: a review. *Am. J. Med. Genet. A* 134A: 88-94.
3. Aurizi, C., et al. 2007. Heterogeneity of mutations in the ferrochelatase gene in Italian patients with erythropoietic protoporphyria. *Mol. Genet. Metab.* 90: 402-407.
4. Broderick, P., et al. 2007. A genome-wide association study shows that common alleles of SMAD7 influence colorectal cancer risk. *Nat. Genet.* 39: 1315-1317.
5. Kamal, A.H. et al. 2007. Hereditary hemorrhagic telangiectasia. *Mayo Clin. Proc.* 82: 1364.
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CHROMOSOMAL LOCATION

Genetic locus: MTCL1 (human) mapping to 18p11.22.

PRODUCT

MTCL1 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 MTCL1 shRNA Plasmid (h): sc-75383-SH and MTCL1 shRNA (h) Lentiviral Particles: sc-75383-V as alternate gene silencing products.

For independent verification of MTCL1 (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-75383A, sc-75383B and sc-75383C.

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

MTCL1 siRNA (h) is recommended for the inhibition of MTCL1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MTCL1 gene expression knockdown using RT-PCR Primer: MTCL1 (h)-PR: sc-75383-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.