

COMMD1 siRNA (h): sc-94689

BACKGROUND

Copper is an essential micronutrient used as a co-factor for several essential enzymes in all living organisms. Due to the high toxicity of copper, its metabolism is tightly regulated and defects in this regulation can cause Menkes (deficiency) or Wilson (accumulation) disease in various tissue. COMMD1 (copper metabolism MURR1 domain-containing protein 1), also known as MURR1, is a 190 amino acid protein responsible for inhibition of TNF-induced NF κ B p50 and has a suggested role in facilitation of biliary copper excretion within hepatocytes. COMMD1 localizes to both the nucleus and cytoplasm within the cell. Highest expression is found in liver tissue, with lower expressions in lung, heart, kidney and brain tissue. COMMD1 interacts directly with COMMD6 and ATP7B, and indirectly with I κ B- β and COMMD7. All ten members of the COMMD family (COMMD1-10) contain a conserved COMM domain which provides an interface for protein-protein interactions.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607238. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Klomp, A.E., et al. 2003. The ubiquitously expressed MURR1 protein is absent in canine copper toxicosis. *J. Hepatol.* 39: 703-709.
3. Coronado, V.A., et al. 2005. COMMD1 (MURR1) as a candidate in patients with copper storage disease of undefined etiology. *Clin. Genet.* 68: 548-551.
4. Burstein, E., et al. 2005. COMMD proteins, a novel family of structural and functional homologs of MURR1. *J. Biol. Chem.* 280: 22222-22232.
5. de Bie, P., et al. 2005. The many faces of the copper metabolism protein MURR1/COMMD1. *J. Hered.* 96: 803-811.
6. de Bie, P., et al. 2007. Distinct Wilson's disease mutations in ATP7B are associated with enhanced binding to COMMD1 and reduced stability of ATP7B. *Gastroenterology* 133: 1316-1326.
7. Narindrasorasak, S., et al. 2007. Characterization and copper binding properties of human COMMD1 (MURR1). *Biochemistry* 46: 3116-3128.

CHROMOSOMAL LOCATION

Genetic locus: COMMD1 (human) mapping to 2p15.

PRODUCT

COMMD1 siRNA (h) is a pool of 2 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 COMMD1 shRNA Plasmid (h): sc-94689-SH and COMMD1 shRNA (h) Lentiviral Particles: sc-94689-V as alternate gene silencing products.

For independent verification of COMMD1 (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-94689A and sc-94689B.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

COMMD1 siRNA (h) is recommended for the inhibition of COMMD1 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.

GENE EXPRESSION MONITORING

COMMD1 (B-3): sc-518177 is recommended as a control antibody for monitoring of COMMD1 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor COMMD1 gene expression knockdown using RT-PCR Primer: COMMD1 (h)-PR: sc-94689-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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