

CD71 siRNA (m): sc-37071

BACKGROUND

CD71, also known as the transferrin receptor (TFR), is a type II membrane glycoprotein that exists as a disulfide-linked homodimer of two identical subunits. CD71 binds to two molecules of transferrin and a serum iron-transport protein, and directs the cellular uptake of iron via receptor-mediated endocytosis. CD71 is expressed, typically at high levels, on all proliferating cells, reticulocytes and erythroid precursors. It is not expressed on resting leukocytes, but is upregulated upon activation of lymphocytes, monocytes and macrophages. CD71 is also found on most dividing cells and on brain endothelium. A second transferrin receptor, TFR2, also mediates the uptake of transferrin-bound iron. TFR2 is a two-subunit homodimer and is highly expressed in liver as well as in hepatocytes and erythroid precursors. Mutations in the TFR2 gene result in hereditary hemochromatosis type III (HFE3), an iron overloading disorder predominant in Caucasians.

REFERENCES

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3. Lesley, J.F., et al. 1985. Inhibition of cell growth by monoclonal anti-transferrin receptor antibodies. *Mol. Cell. Biol.* 5: 1814-1821.
4. Kemp, J.D., et al. 1987. Role of the transferrin receptor in lymphocyte growth: a rat IgG monoclonal antibody against the murine transferrin receptor produces highly selective inhibition of T and B cell activation protocols. *J. Immunol.* 138: 2422-2426.
5. Sauvage, C.A., et al. 1987. Effects of monoclonal antibodies that block transferrin receptor function on the *in vivo* growth of a syngeneic murine leukemia. *Cancer Res.* 47: 747-753.
6. Kemp, J.D., et al. 1989. Inhibition comparison of three reagents and further studies of their range of effects and mechanism of action. *Cell. Immunol.* 122: 218-230.
7. Testa, U., et al. 1993. The transferrin receptor. *Crit. Rev. Oncog.* 4: 241-276.
8. Brekelmans, P., et al. 1995. Transferrin receptor expression as a marker of immature cycling thymocytes in the mouse. *Cell. Immunol.* 159: 331-339.
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CHROMOSOMAL LOCATION

Genetic locus: Tfrc (mouse) mapping to 16 B3.

PROTOCOLS

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

PRODUCT

CD71 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 CD71 shRNA Plasmid (m): sc-37071-SH and CD71 shRNA (m) Lentiviral Particles: sc-37071-V as alternate gene silencing products.

For independent verification of CD71 (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-37071A, sc-37071B and sc-37071C.

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

CD71 siRNA (m) is recommended for the inhibition of CD71 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.

GENE EXPRESSION MONITORING

CD71 (YTA 74.4): sc-59112 is recommended as a control antibody for monitoring of CD71 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 CD71 gene expression knockdown using RT-PCR Primer: CD71 (m)-PR: sc-37071-PR (20 μ l, 470 bp). 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.