

CD37 siRNA (h): sc-42784

BACKGROUND

Tetra-spans transmembrane family (TSTF) members (CD9, CD37, CD53, CD63, CD81 and CD82) are cell-surface proteins that are characterized by the presence of four hydrophobic, membrane-spanning domains. TSTF members can mediate signal transduction events influencing the regulation of cell development, adhesion, activation, growth and motility. The human CD37 gene maps to chromosome 19q13.33 and encodes a 281 amino acid protein. CD37 is a cell surface glycoprotein that can complex with integrins and other TSTF proteins and may play a role in T cell-B cell interactions. CD37 is strongly expressed on normal and neoplastic mature slg⁺ B cells and is detected at low levels on resting and activated T cells, neutrophils, granulocytes and monocytes. Transgenic mouse models elicit no changes in development and cellular composition of lymphoid organs where CD37 is lacking.

REFERENCES

1. Classon, B.J., et al. 1989. The primary structure of the human leukocyte antigen CD37, a species homologue of the rat MRC OX-44 antigen. *J. Exp. Med.* 169: 1497-1502.
2. Okochi, H., et al. 1997. Expression of tetra-spans transmembrane family (CD9, CD37, CD53, CD63, CD81 and CD82) in normal and neoplastic human keratinocytes: an association of CD9 with $\alpha 3\beta 1$ integrin. *Br. J. Dermatol.* 137: 856-863.
3. Maecker, H.T., et al. 1997. The tetraspanin superfamily: molecular facilitators. *FASEB J.* 11: 428-442.
4. Knobloch, K.P., et al. 2000. Targeted inactivation of the tetraspanin CD37 impairs T-cell-dependent B-cell response under suboptimal costimulatory conditions. *Mol. Cell. Biol.* 20: 5363-5369.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 227400. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Zhao, X., et al. 2007. Targeting CD37-positive lymphoid malignancies with a novel engineered small modular immunopharmaceutical. *Blood* 110: 2569-2577.
7. Meyer-Wentrup, F., et al. 2007. Dectin-1 interaction with tetraspanin CD37 inhibits IL-6 production. *J. Immunol.* 178: 154-162.
8. Gartlan, K.H., et al. 2010. A complementary role for the tetraspanins CD37 and Tssc6 in cellular immunity. *J. Immunol.* 185: 3158-3166.

CHROMOSOMAL LOCATION

Genetic locus: CD37 (human) mapping to 19q13.33.

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.

PRODUCT

CD37 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 CD37 shRNA Plasmid (h): sc-42784-SH and CD37 shRNA (h) Lentiviral Particles: sc-42784-V as alternate gene silencing products.

For independent verification of CD37 (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-42784A, sc-42784B and sc-42784C.

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

CD37 siRNA (h) is recommended for the inhibition of CD37 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

CD37 (HH1): sc-18881 is recommended as a control antibody for monitoring of CD37 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 CD37 gene expression knockdown using RT-PCR Primer: CD37 (h)-PR: sc-42784-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.