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SANTA CRUZ BIOTECHNOLOGY, INC.

CD1D siRNA (h): sc-42747

BACKGROUND

The CD1 multigene family encodes five forms of the CD1 T cell surface glycoprotein in human, designated CD1A, 1B, 1C, 1D and 1E. CD1, a type 1 membrane protein, has structural similarity to the MHC class I antigen and has been shown to present lipid antigens for recognition by T lymphocytes. CD1 antigens are associated with β-2-Microglobulin and expressed on cortical thymocytes, Langerhans cells, a B cell subset and some dendritic cells. Adaptor protein complexes and CD1-associated chaperones control CD1 trafficking and the development and activation of CD1-restricted T cells. CD1D is present on human intestinal epithelial cells (IEC) and exists as a β-2-Microglobulin-independent nonglycosylated form or a β-2-Microglobulin-dependent glycosylated form. The human CD1D gene maps to chromosome 1q23.1 and encodes a 335 amino acid protein that influences normal T cell maturation.

REFERENCES

1. Balk, S.P., et al. 1989. Isolation and characterization of a cDNA and gene coding for a fourth CD1 molecule. Proc. Natl. Acad. Sci. USA 86: 252-256.
2. Calabi, F., et al. 1989. Two classes of CD1 genes. Eur. J. Immunol. 19: 285-292.
3. Bilsland, C.A., et al. 1991. The identification of the β-2-Microglobulin binding antigen encoded by the human CD1D gene. Eur. J. Immunol. 21: 71-78.
4. Balk, S.P., et al. 1994. β-2-Microglobulin-independent MHC class Ib molecule expressed by human intestinal pithelium. Science 265: 259-262.
5. Porcelli, S.A. 1995. The CD1 family: a third lineage of antigen-presenting molecules. Adv. Immunol. 59: 1-18.
6. Melian, A., et al. 1996. Antigen presentation by CD1 and MHC-encoded class I-like molecules. Curr. Opin. Immunol. 8: 82-88.
7. Bauer, A., et al. 1997. Analysis of the requirement for β-2-Microglobulin for expression and formation of human CD1 antigens. Eur. J. Immunol. 27: 1366-1373.

CHROMOSOMAL LOCATION

Genetic locus: CD1D (human) mapping to 1q23.1.

PRODUCT

CD1D 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CD1D shRNA Plasmid (h): sc-42747-SH and CD1D shRNA (h) Lentiviral Particles: sc-42747-V as alternate gene silencing products.

For independent verification of CD1D (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-42747A, sc-42747B and sc-42747C.

PROTOCOLS

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

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CD1D siRNA (h) is recommended for the inhibition of CD1D 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 µM in 66 µl. 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

CD1D (C3D5): sc-19632 is recommended as a control antibody for monitoring of CD1D 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 CD1D gene expression knockdown using RT-PCR Primer: CD1D (h)-PR: sc-42747-PR (20 µl). 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.