SANTA CRUZ BIOTECHNOLOGY, INC.

KIR2DL1 siRNA (h): sc-42893

BACKGROUND

NKAT (NK-associated transcripts) gene products, known as killer immunoglobulin-like receptors or KIRs, downregulate the cytotoxicity of NK cells upon recognition of specific class I major histocompatibility complex (MHC) molecules on target cells. This family of receptors is characterized by an extracellular region with two to three immunoglobulin-superfamily domains and a cytoplasmic domain with an antigen receptor activation motif (ARAM). KIRs and other inhibitory receptors also possess a common cytoplasmic sequence (I/VxYxxL/V) known as an ITIM (immunoreceptor tyrosine-based inhibitory motif). The human inhibitory natural killer cell immunoglobulin-like receptor 2DL1, also designated KIR2DL1, CL-42, NKAT1, P58.1 or CD158a long form, is a 348 amino acid type I transmembrane protein. KIR2DL1 can bind human leukocyte antigen-C (HLA-C) via both polar and hydrophobic interactions through Met 44 in a binding pocket that coordinates Lys 80 of HLA-C.

REFERENCES

1. Colonna, M., et al. 1995. Cloning of immunoglobulin-superfamily members associated with HLA-C and HLA-B recognition by human natural killer cells. Science 268: 405-408.
2. Suto, Y., et al. 1996. Chromosomal localization of the human natural killer cell class I receptor family genes to 19q13.4 by fluorescence *in situ* hybridization. Genomics 35: 270-272.
3. Winter, C.C., et al. 1998. Direct binding and functional transfer of NK cell inhibitory receptors reveal novel patterns of HLA-C allotype recognition. J. Immunol. 161: 571-577.
4. Fan, Q.R., et al. 2000. A disulfide-linked natural killer cell receptor dimer has higher affinity for HLA-C than wildtype monomer. Eur. J. Immunol. 30: 2692-2697.
5. Matsui, T., et al. 2001. Detection of autoantibodies to killer immunoglobulin-like receptors using recombinant fusion proteins for two killer immunoglobulin-like receptors in patients with systemic autoimmune diseases. Arthritis Rheum. 44: 384-388.
6. Katz, G., et al. 2001. Recognition of HLA-Cw4 but not HLA-Cw6 by the NK cell receptor killer cell Ig-like receptor two-domain short tail number 4. J. Immunol. 166: 7260-7267.
7. Fan, Q.R., et al. 2001. Crystal structure of the human natural killer cell inhibitory receptor KIR2DL1-HLA-Cw4 complex. Nat. Immunol. 2: 452-460.

CHROMOSOMAL LOCATION

Genetic locus: KIR2DL1 (human) mapping to 19q13.42.

PRODUCT

KIR2DL1 siRNA (h) is a target-specific 19-25 nt siRNA 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 KIR2DL1 shRNA Plasmid (h): sc-42893-SH and KIR2DL1 shRNA (h) Lentiviral Particles: sc-42893-V as alternate gene silencing 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

KIR2DL1 siRNA (h) is recommended for the inhibition of KIR2DL1 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

KIR2DL1 (JJ C11.6): sc-53595 is recommended as a control antibody for monitoring of KIR2DL1 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 KIR2DL1 gene expression knockdown using RT-PCR Primer: KIR2DL1 (h)-PR: sc-42893-PR (20 µl, 480 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.

PROTOCOLS

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