SANTA CRUZ BIOTECHNOLOGY, INC.

KIR2DL4 siRNA (h): sc-106765

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 human killer cell immunoglobulin-like receptor 2DL4 (KIR2DL4), also referred to as 2DL4 or CD158d, triggers potent IFN-γ responses but weak cytotoxicity in resting NK cells because of the low stoichiometric association with γ.

REFERENCES

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2. Kikuchi-Maki, A., et al. 2003. KIR2DL4 is an IL-2-regulated NK cell receptor that exhibits limited expression in humans but triggers strong IFN-γ production. J. Immunol. 171: 3415-3425.
3. Williams, F., et al. 2003. Investigation of killer cell immunoglobulin-like receptor gene diversity: I. KIR2DL4. Hum. Immunol. 65: 31-38.
4. Gedil, M.A., et al. 2005. Genomic characterization of KIR2DL4 in families and unrelated individuals reveals extensive diversity in exon and intron sequences including a common frameshift variation occurring in several alleles. Tissue Antigens 65: 402-418.
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6. Trompeter, H.I., et al. 2005. Three structurally and functionally divergent kinds of promoters regulate expression of clonally distributed killer cell Ig-like receptors (KIR), of KIR2DL4 and of KIR3DL3. J. Immunol. 174: 4135-4143.
7. Yan, W.H. and Fan, L.A. 2005. Residues Met 76 and Gln 79 in HLA-G α1 domain involve in KIR2DL4 recognition. Cell Res. 15: 176-182.

CHROMOSOMAL LOCATION

Genetic locus: KIR2DL4 (human) mapping to 19q13.42.

PRODUCT

KIR2DL4 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 KIR2DL4 shRNA Plasmid (h): sc-106765-SH and KIR2DL4 shRNA (h) Lentiviral Particles: sc-106765-V as alternate gene silencing products.

For independent verification of KIR2DL4 (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-106765A, sc-106765B and sc-106765C.

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

KIR2DL4 siRNA (h) is recommended for the inhibition of KIR2DL4 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KIR2DL4 gene expression knockdown using RT-PCR Primer: KIR2DL4 (h)-PR: sc-106765-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.

PROTOCOLS

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