SANTA CRUZ BIOTECHNOLOGY, INC.

# Ly-49D siRNA (m): sc-42941

## BACKGROUND

The activity of natural killer (NK) cells is regulated by members of multiple receptor families that recognize class I MHC molecules, such as the killer cell inhibitory receptor/leukocyte immunoglobulin-like receptor (KIR/LIR) family and the C-type lectin superfamily. The KIR/LIR family includes p91A (also designated pp130 or PIR-B, for paired Immunoglobulin-like receptor-B) and p91B (also designated PIR-A). p91A acts as an inhibitory receptor through interactions with SHP-1, whereas p91B acts as an activating receptor. CD94, NKG2 and Ly-49 are members of the C-type lectin superfamily of type II membrane glycoproteins. CD94 forms heterodimers with NKG2 isoforms on the surface of NK cells, whereas Ly-49 isoforms form homodimers. There are at least 21 Ly-49 proteins, ranging from 230 to 280 amino acids in length. The Ly-49 isoforms, which are clustered on human chromosome 16, all function to present the C-type lectin domain on the cell membrane. NKG2-D, expressed on NK cells, $\gamma\delta$ T cells, and $CD8^+$ $\alpha\beta$ T cells, is a receptor for the stress inducible protein MICA, an antigen frequently expressed in epithelial tumors.

## REFERENCES


1. Long, E.O. and Wagtmann, N. 1997. Natural killer cell receptors. Curr. Opin. Immunol. 9: 344-350.
2. Moretta, A. and Moretta, L. 1997. HLA class I specific inhibitory receptors. Curr. Opin. Immunol. 9: 694-701.
3. Hayami, K., Fukuta, D., Nishikawa, Y., Yamashita, Y., Inui, M., Ohyama, Y., Hikida, M., Ohmori, H. and Takai, T. 1997. Molecular cloning of a novel murine cell-surface glycoprotein homologous to killer cell inhibitory receptors. J. Biol. Chem. 272: 7320-7327.
4. Takei, F., Brennan, J. and Mager, D.L. 1997. The Ly-49 family: genes, proteins and recognition of class I MHC. Immunol. Rev. 155: 67-77.
5. Vance, R.E., Tanamachi, D.M., Hanke, T. and Raulet D.H. 1997. Cloning of a mouse homolog of CD94 extends the family of C-type lectins on murine natural killer cells. Eur. J. Immunol. 27: 3236-3241.
6. Ryan, J.C. and Seaman, W.E. 1997. Divergent functions of lectin-like receptors on NK cells. Immunol. Rev. 155: 79-89.
7. Berg, K.L., Carlberg, K., Rohrschneider, L.R., Siminovitch, K.A. and Stanley, E.R. 1998. The major SHP-1-binding, tyrosine-phosphorylated protein in macrophages is a member of the KIR/LIR family and an SHP-1 substrate. Oncogene 17: 2535-2541.
8. Salcedo, M. 1999. Inhibitory role of murine Ly49 lectin-like receptors on natural killer cells. Curr. Top. Microbiol. Immunol. 244: 97-105.
9. Bauer, S., Groh, V., Wu, J., Steinle, A., Phillips, J.H., Lanier, L.L. and Spies, T. 1999. Activation of NK cells and T cells by NKG2D, a receptor for stress-inducible MICA. Science 285: 727-729.


## CHROMOSOMAL LOCATION

Genetic locus: Klra4 (mouse) mapping to 6 F3.

## PROTOCOLS

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

## PRODUCT

Ly-49D siRNA (m) 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 Ly-49D shRNA Plasmid (m): sc-42941-SH and Ly-49D shRNA (m) Lentiviral Particles: sc-42941-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

Ly-49D siRNA (m) is recommended for the inhibition of Ly-49D 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 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 Ly-49D gene expression knockdown using RT-PCR Primer: Ly-49D (m)-PR: sc-42941-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.