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# NK 2B4 siRNA (h): sc-42944

## BACKGROUND

Natural killer (NK) cells are bone marrow-derived lymphocytes that can kill certain tumor cells and virally infected cells. There are multiple immunoglobulin superfamily (IgSF) receptor-ligand interactions that coordinate NK cell recognition of target cells and cytolytic function. The IgSF receptor NK 2B4 (CD244) is a ligand for CD48 that is expressed on the surface of all mouse and human NK cells and the subset of T cells that mediate NK-like killing. NK 2B4 is a cell surface glycoprotein of the immunoglobulin superfamily that is involved in the regulation of natural killer and T lymphocyte function. NK 2B4 binds the Src homology 2 domain-containing protein (SH2D1A) or signaling lymphocyte activation molecule (SLAM)-associated protein (SAP), which may function as regulators of NK 2B4-associated signal transduction pathways. NK 2B4 is expressed in human spleen, peripheral blood leukocytes, lymph node, bone marrow and fetal liver.

## REFERENCES

1. Chuang, S.S., et al. 1999. Molecular cloning and characterization of the promoter region of murine natural killer cell receptor 2B4. *Biochim. Biophys. Acta* 1447: 244-250.
2. Boles, K.S., et al. 1999. Molecular characterization of a novel human natural killer cell receptor homologous to mouse 2B4. *Tissue Antigens* 54: 27-34.
3. Nakajima, H., et al. 1999. Activating interactions in human NK cell recognition: the role of 2B4-CD48. *Eur. J. Immunol.* 29: 1676-1683.
4. Kumaresan, P.R., et al. 2000. Molecular cloning of transmembrane and soluble forms of a novel rat natural killer cell receptor related to 2B4. *Immunogenetics* 51: 306-313.
5. Parolini, S., et al. 2000. X-linked lymphoproliferative disease. 2B4 molecules displaying inhibitory rather than activating function are responsible for the inability of natural killer cells to kill Epstein-Barr virus-infected cells. *J. Exp. Med.* 192: 337-346.
6. Kumaresan, P.R., et al. 2000. Molecular characterization of the rat NK cell receptor 2B4. *Mol. Immunol.* 37: 735-744.

## CHROMOSOMAL LOCATION

Genetic locus: CD244 (human) mapping to 1q23.3.

## PRODUCT

NK 2B4 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NK 2B4 shRNA Plasmid (h): sc-42944-SH and NK 2B4 shRNA (h) Lentiviral Particles: sc-42944-V as alternate gene silencing products.

For independent verification of NK 2B4 (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-42944A, sc-42944B and sc-42944C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

NK 2B4 siRNA (h) is recommended for the inhibition of NK 2B4 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  $\mu$ M in 66  $\mu$ 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

NK 2B4 (HD2): sc-53596 is recommended as a control antibody for monitoring of NK 2B4 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NK 2B4 gene expression knockdown using RT-PCR Primer: NK 2B4 (h)-PR: sc-42944-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.