SANTA CRUZ BIOTECHNOLOGY, INC.

NKp46 siRNA (m): sc-63344

BACKGROUND

NKp46 (lymphocyte antigen 94, LY94) is a natural cytotoxicity receptor that belongs to the immunoglobulin superfamily and is expressed by all resting or activated NK cells, but not on T cells or B cells. The NKp46 cDNA encodes a 304 amino acid type I transmembrane protein with an extracellular region preceded by a 21 residue signal peptide and 2 cysteine-bridged C2-type Ig-like domains. A stem connects the extracellular domain to a 19 amino acid, arginine containing-transmembrane domain. NKp46 is involved in natural cytotoxicity and is involved in the recognition and lysis of both human and murine tumor cells. NKp46-expressing NK cells may recognize target cells infected by influenza or parainfluenza without the decreased expression of target-cell MHC class I protein, providing a mechanism for NK cells to destroy virus-infected cells and tumor cells without the need for previous antigen stimulation.

REFERENCES

1. Sivori, S., et al. 1997. p46, a novel natural killer cell-specific surface molecule that mediates cell activation. J. Exp. Med. 186: 1129-1136.
2. Pessino, A., et al. 1998. Molecular cloning of NKp46: a novel member of the immunoglobulin superfamily involved in triggering of natural cytotoxicity. J. Exp. Med. 188: 953-960.
3. Sivori, S., et al. 1999. NKp46 is the major triggering receptor involved in the natural cytotoxicity of fresh or cultured human NK cells. Correlation between surface density of NKp46 and natural cytotoxicity against autologous, allogeneic or xenogeneic target cells. Eur. J. Immunol. 29: 1656-1666.
4. Mandelboim, O., et al. 2001. Recognition of haemagglutinins on virus-infected cells by NKp46 activates lysis by human NK cells. Nature 409: 1055-1060.
5. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 604530. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. LocusLink Report (LocusID: 9437). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Ncr1 (mouse) mapping to 7 A1.

PRODUCT

NKp46 siRNA (m) 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 NKp46 shRNA Plasmid (m): sc-63344-SH and NKp46 shRNA (m) Lentiviral Particles: sc-63344-V as alternate gene silencing products.

For independent verification of NKp46 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-63344A, sc-63344B and sc-63344C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

NKp46 siRNA (m) is recommended for the inhibition of NKp46 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 NKp46 gene expression knockdown using RT-PCR Primer: NKp46 (m)-PR: sc-63344-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Lai, H.C., et al. 2012. Activation of NK cell cytotoxicity by the natural compound 2,3-butanediol. J. Leukoc. Biol. 92: 807-814.
2. Lu, C.C., et al. 2014. NK cells kill mycobacteria directly by releasing perforin and granulysin. J. Leukoc. Biol. 96: 1119-1129.
3. Chang, C.J., et al. 2014. Ganoderma lucidum stimulates NK cell cytotoxicity by inducing NKG2D/NCR activation and secretion of perforin and granulysin. Innate Immun. 20: 301-311.
4. Lu, C.C., et al. 2016. Immunomodulatory properties of medicinal mushrooms: differential effects of water and ethanol extracts on NK cell-mediated cytotoxicity. Innate Immun. 22: 522-533.

PROTOCOLS

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