SANTA CRUZ BIOTECHNOLOGY, INC.

ULBP2 siRNA (h): sc-44564

BACKGROUND

Cytomegalovirus UL16 binding proteins, known as ULBPs, are GPI-linked glycoproteins that belong to the extended MHC class I family. ULBP proteins are ligands for the activating receptor, NKG2D/DAP10, which causes lymphocyte activation, resulting in the secretion of cytokines, such as interferon-γ and tumor cell lysis. ULBPs stimulate cytokine and chemokine production from NK cells, CD8 αβ T cells and γδ T cells. UL16, binds to three of the five known ligands for human NKG2D. UL16 is retained in the endoplasmic reticulum and *cis*-Golgi apparatus of cells and causes MICB to be similarly retained and stabilized within cells. Coexpression of UL16 markedly reduces cell surface levels of MICB, ULBP1 and ULBP2, and decreases susceptibility to natural killer cell-mediated cytotoxicity.

REFERENCES

1. Dunn, C., et al. 2003. Human cytomegalovirus glycoprotein UL16 causes intracellular sequestration of NKG2D ligands, protecting against natural killer cell cytotoxicity. J. Exp. Med. 197: 1427-1439.
2. Rolle, A., et al. 2003. Effects of human cytomegalovirus infection on ligands for the activating NKG2D receptor of NK cells: upregulation of UL16-binding protein ULBP1 and ULBP2 is counteracted by the viral UL16 protein. J. Immunol. 171: 902-908.
3. Maccalli, C., et al. 2003. NKG2D engagement of colorectal cancer-specific T cells strengthens TCR-mediated antigen stimulation and elicits TCR independent anti-tumor activity. Eur. J. Immunol. 33: 2033-2043.
4. Poggi, A., et al. 2004. Vδ1 T lymphocytes from BCLL patients recognize ULBP3 expressed on leukemic B cells and upregulated by trans-retinoic acid. Cancer Res. 64: 9172-9179.
5. Nowbakht, P., et al. 2005. Ligands for natural killer cell activating receptors are expressed upon maturation of normal myelomonocytic cells but are low in acute myeloid leukemias. Blood 105: 3615-3622.
6. SWISS-PROT/TrEMBL (Q9BZM5) World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: ULBP2 (human) mapping to 6q25.1.

PRODUCT

ULBP2 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 ULBP2 shRNA Plasmid (h): sc-44564-SH and ULBP2 shRNA (h) Lentiviral Particles: sc-44564-V as alternate gene silencing products.

For independent verification of ULBP2 (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-44564A, sc-44564B and sc-44564C.

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

ULBP2 siRNA (h) is recommended for the inhibition of ULBP2 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

ULBP2 (6F6): sc-53135 is recommended as a control antibody for monitoring of ULBP2 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 ULBP2 gene expression knockdown using RT-PCR Primer: ULBP2 (h)-PR: sc-44564-PR (20 µl, 435 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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