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ULBP2 shRNA (h) Lentiviral Particles: sc-44564-V

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 $\alpha\beta$ T cells, and $\gamma\delta$ 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

- 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.
- Rolle A., et al. 2003. Effects of human cytomegalovirus infection on ligands for the activating NKG2D receptor of NK cells: up-regulation of UL16-binding protein (ULBP)1 and ULBP2 is counteracted by the viral UL16 protein. *J. Immunol.* 171: 902-908.
- 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.
- Poggi, A., et al. 2004. Vdelta1 T lymphocytes from B-CLL patients recognize ULBP3 expressed on leukemic B cells and up-regulated by trans-retinoic acid. *Cancer Res.* 64: 9172-9179.

CHROMOSOMAL LOCATION

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

PRODUCT

ULBP2 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see ULBP2 siRNA (h): sc-44564 and ULBP2 shRNA Plasmid (h): sc-44564-SH as alternate gene silencing products.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

APPLICATIONS

ULBP2 shRNA (h) Lentiviral Particles is recommended for the inhibition of ULBP2 expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

ULBP2 (H-48): sc-33565 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 μ l, 435 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

PROTOCOLS

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