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Langerin shRNA (h) Lentiviral Particles: sc-43888-V

BACKGROUND

Langerhans cells (LCs) are a subset of immature dendritic cells (DCs) that specifically localize in the epidermis and other mucosal epithelia. Epidermal LCs possess strong immunostimulatory capacity and play a central role in the initiation and regulation of immune responses. Langerin (CD207) is a Ca²⁺-dependent, C-type lectin domain-containing, type II transmembrane protein that induces epidermal LCs to differentiate into Birbeck granules (BG). BGs are organelles with superimposing and zipper membranes that influence proper class I type antigen presentation to the circulating T-cells. Human spleen, lymph node, thymus, liver, lung and heart express Langerin protein. The human Langerin gene maps to chromosome 2p13 and encodes a 328 amino acid protein.

REFERENCES

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- Mohamadzadeh, M., et al. 2001. Interleukin 15 skews monocyte differentiation into dendritic cells with features of Langerhans cells. *J. Exp. Med.* 194: 1013-1020.
- Larregina, A.T., et al. 2001. Dermal-resident CD14⁺ cells differentiate into Langerhans cells. *Nat. Immunol.* 2: 1151-1158.
- Valladeau, J., et al. 2002. Identification of mouse langerin/CD207 in Langerhans cells and some dendritic cells of lymphoid tissues. *J. Immunol.* 168: 782-792.
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CHROMOSOMAL LOCATION

Genetic locus: CD207 (human) mapping to 2p13.3.

PRODUCT

Langerin 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 µl frozen stock containing 1.0 x 10⁶ 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 Langerin siRNA (h): sc-43888 and Langerin shRNA Plasmid (h): sc-43888-SH as alternate gene silencing products.

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.

APPLICATIONS

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

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 µl frozen viral stock containing 1.0 x 10⁶ 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

Langerin (H-4): sc-271272 is recommended as a control antibody for monitoring of Langerin 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-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Langerin gene expression knockdown using RT-PCR Primer: Langerin (h)-PR: sc-43888-PR (20 µl). 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.

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.

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