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IL-28B shRNA (m) Lentiviral Particles: sc-45665-V

BACKGROUND

The interleukins are a broad family of well characterized cytokines, primarily of hematopoietic cell origin. As new cytokines are molecularly characterized, they are assigned an IL number to maintain a standard nomenclature. The interleukins are secreted by immune cells (mainly macrophages, B-cells or T-cells) that regulate a wide range of immune system functions. The functions of different interleukins vary from the regulation of inflammatory and immune responses to the regulation of other interleukins. Induced by viral infection and show antiviral activity, IL-28A, IL-28B and IL-29 are closely related genes that form a cytokine gene cluster on human chromosome region mapped to 19q13. IL-28A and IL-28B may play a role in antiviral immunity through up-regulation of MHC class I antigen expression and act as ligands for the heterodimeric class II cytokine receptor composed of IL-10R and IL-28R.

REFERENCES

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2. Pestka, S., et al. 2004. Interferons, interferon-like cytokines, and their receptors. *Immunol. Rev.* 202: 8-32.
3. Bartlett, N.W., et al. 2004. A new member of the interleukin 10-related cytokine family encoded by a poxvirus. *J. Gen. Virol.* 85: 1401-1412.
4. Donnelly, R.P., et al. 2004. The expanded family of class II cytokines that share the IL-10 receptor-2 (IL-10R2) chain. *J. Leukoc. Biol.* 76: 314-321.
5. Pestka, S., et al. 2004. Interleukin-10 and related cytokines and receptors. *Annu. Rev. Immunol.* 22: 929-979.
6. Logsdon, N.J., et al. 2004. The IL-10R2 binding hot spot on IL-22 is located on the N-terminal helix and is dependent on N-linked glycosylation. *J. Mol. Biol.* 342: 503-514.

CHROMOSOMAL LOCATION

Genetic locus: Ifnl3 (mouse) mapping to 7 A3.

PRODUCT

IL-28B shRNA (m) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 2 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 IL-28B siRNA (m): sc-45665 and IL-28B shRNA Plasmid (m): sc-45665-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

IL-28B shRNA (m) Lentiviral Particles is recommended for the inhibition of IL-28B expression in mouse 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

IL-28 (D-12): sc-137151 is recommended as a control antibody for monitoring of IL-28B 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 IL-28B gene expression knockdown using RT-PCR Primer: IL-28B (m)-PR: sc-45665-PR (20 μ l). 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.