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Ig J chain shRNA (h) Lentiviral Particles: sc-45773-V

BACKGROUND

The regions of relatively constant sequence beyond the variable regions of Immunoglobulin are termed constant regions (C regions) and are present in both the heavy and light chains. With few exceptions, the sites of attachment for carbohydrates to immunoglobulin are located in the constant region. The constant regions also serve to hold the variable regions on both heavy and light chain together by virtue of the disulfide bond between them. The immunoglobulin J chain (Ig J chain) is a linker protein for two monomer units of either immunoglobulin α (IgA) or μ (IgM) polypeptides. For IgA the J chained-joined dimer induces larger polymers whereas for the IgM pentamer it functions as a nucleating unit. The Ig J chain is also important in binding these immunoglobulins to secretory components.

REFERENCES

1. Yagi, M., et al. 1982. J chain is encoded by a single gene unlinked to other immunoglobulin structural genes. *J. Exp. Med.* 155: 647-654.
2. Cann, G.M., et al. 1982. Primary structure of the immunoglobulin J chain from the mouse. *Proc. Natl. Acad. Sci. USA* 79: 6656-6660.
3. Zikan, J., et al. 1985. Secondary structure of the immunoglobulin J chain. *Proc. Natl. Acad. Sci. USA* 82: 5905-5909.
4. Matsuuchi, L., et al. 1986. Immunoglobulin J chain gene from the mouse. *Proc. Natl. Acad. Sci. USA* 83: 456-460.
5. Bastian, A., et al. 1992. Intra- and interchain disulfide bridges of the human J chain in secretory immunoglobulin A. *Biol. Chem. Hoppe-Seyler* 373: 1255-1263.
6. Frutiger, S., et al. 1992. Disulfide bond assignment in human J chain and its covalent pairing with immunoglobulin M. *Biochemistry*. 31: 12643-12647.

CHROMOSOMAL LOCATION

Genetic locus: IGJ (human) mapping to 4q13.3.

PRODUCT

Ig J chain 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 Ig J chain siRNA (h): sc-45773 and Ig J chain shRNA Plasmid (h): sc-45773-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.

PROTOCOLS

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

APPLICATIONS

Ig J chain shRNA (h) Lentiviral Particles is recommended for the inhibition of Ig J chain 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

Ig J chain (B-6) : sc-271967 is recommended as a control antibody for monitoring of Ig J chain 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 Ig J chain gene expression knockdown using RT-PCR Primer: Ig J chain (h)-PR: sc-45773-PR (20 μ l). Annealing temperature for the primers should be $55-60^\circ\text{C}$ and the extension temperature should be $68-72^\circ\text{C}$.

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.