SANTA CRUZ BIOTECHNOLOGY, INC.

Ig J Chain siRNA (h): sc-45773

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.
7. Chintalacharuvu, K.R., et al. 1993. Unstable inter-H chain disulfide bonding and non-covalently associated J chain in rat dimeric IgA. Mol. Immunol. 30: 19-26.
8. Mestecky, J., et al. 1997. Immunoglobulin J chain. An early differentiation marker of human B cells. Ann. N.Y. Acad. Sci. 815: 111-113.

CHROMOSOMAL LOCATION

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

PRODUCT

Ig J chain 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 Ig J chain shRNA Plasmid (h): sc-45773-SH and Ig J chain shRNA (h) Lentiviral Particles: sc-45773-V as alternate gene silencing products.

For independent verification of Ig J chain (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-45773A, sc-45773B and sc-45773C.

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

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

Ig J chain (F-12): sc-133177 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 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 Ig J chain gene expression knockdown using RT-PCR Primer: Ig J chain (h)-PR: sc-45773-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

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