

SC siRNA (h): sc-42964

BACKGROUND

Polymeric IgA and IgM is produced and secreted by B cells in the lamina propria, which is beneath the mucosal lining of polarized epithelial cells. Polymeric immunoglobulin receptors, also designated plgRs, are expressed on the basolateral surface of glandular epithelia and mediate transcellular transport of secretory immunoglobulin polymers across the epithelium. plgR associates with secreted dimeric IgA and IgM molecules. During transcellular transport of these Ig polymers, plgR undergoes proteolytic cleavage to generate a fragment called secretory component (SC), polymeric immunoglobulin receptor or poly-Ig receptor. When immunoglobulin polymers associate with SC, they become resistant to enzymatic degradation during the transcytosis process. SC and the plgR are crucial for proper mucosal immunity where they represent a molecular chaperone for polymeric Igs to remain intact and enter into body fluids. The human SC (plgR) gene maps to chromosome 1q32.1 and encodes a 764 amino acid protein. The receptor contains five units with homology to the variable (V) units of immunoglobulins and a transmembrane region that shares homology to certain immunoglobulin variable regions.

REFERENCES

1. Kühn, L.C., et al. 1979. Role of secretory component, a secreted of IgA dimer by epithelial cells. *J. Biol. Chem.* 254: 11072-11081.
2. Nagura, H., et al. 1980. Secretory component in immunoglobulin deficiency; and immunoelectron microscopic study of intestinal epithelium. *Scand. J. Immunol.* 12: 359-363.
3. Hood, L., et al. 1985. T cell antigen receptors and the immunoglobulin supergene family. *Cell* 40: 225-229.

CHROMOSOMAL LOCATION

Genetic locus: PIGR (human) mapping to 1q32.1.

PRODUCT

SC 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SC shRNA Plasmid (h): sc-42964-SH and SC shRNA (h) Lentiviral Particles: sc-42964-V as alternate gene silencing products.

For independent verification of SC (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-42964A, sc-42964B and sc-42964C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SC siRNA (h) is recommended for the inhibition of SC 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 μ M in 66 μ l. 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

SC (C-2): sc-374343 is recommended as a control antibody for monitoring of SC 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 SC gene expression knockdown using RT-PCR Primer: SC (h)-PR: sc-42964-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Bair, A.M., et al. 2009. Ca²⁺ entry via TRPC channels is necessary for thrombin-induced NF κ B activation in endothelial cells through AMP-activated protein kinase and protein kinase C δ . *J. Biol. Chem.* 284: 563-574.
2. Thippegowda, P.B., et al. 2010. Ca²⁺ influx via TRPC channels induces NF κ B-dependent A20 expression to prevent thrombin-induced apoptosis in endothelial cells. *Am. J. Physiol., Cell Physiol.* 298: C656-C664.
3. Lai, V.K., et al. 2012. Non-hypoxic stabilization of HIF-1 α during coordinated interaction between Akt and angiopoietin-1 enhances endothelial commitment of bone marrow stem cells. *J. Mol. Med.* 90: 719-730.

RESEARCH USE

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