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SLPI siRNA (h): sc-42977

BACKGROUND

SLPI, secretory leukocyte protease inhibitor, is an enzyme that belongs to the α -1 antitrypsin antiprotein family. Produced by epithelial cells, SLPI resides in parotid secretions, bronchial, nasal and cervical mucus, and seminal fluid. SLPI plays a primary role in the regulation of neutrophil-mediated inflammation. It does so through proteolysis and subsequent inhibition of the leukocyte serine proteases, including the neutrophil and pancreatic proteases. The promoter region of SLPI has been identified as binding site for IRF-1, interferon regulatory factor. Expression of SLPI is inhibited by IRF-1 co-expression, identifying SLPI as a target of IRF-1 regulation. SLPI also functions as a macrophage derived inhibitor of macrophage response to LPS by inhibiting the production of nitric oxide, which suggests the role of SLPI in LPS tolerance.

REFERENCES

1. Thompson, R.C. and Ohlsson, K. 1986. Isolation, properties, and complete amino acid sequence of human secretory leukocyte inhibitor, a potent inhibitor of leukocyte elastase. *Proc. Natl. Acad. Sci. USA* 83: 6692-6696.
2. Nathan, C.F. and Hibbs, J.B., Jr. 1991. Role of nitric oxide synthesis in macrophage antimicrobial activity. *Curr. Opin. Immunol.* 3: 65-70.
3. Lee, C.H., Igarashi, Y., Hohman, R.J., Kaulbach, H., White, M.V. and Kaliner, M.A. 1993. Distribution of secretory leukoprotease inhibitor in the human nasal airway. *Am. Rev. Respir. Dis.* 147: 710-716.
4. Jin, F.Y., Nathan, C., Radzioch, D. and Ding, A. 1997. Secretory leukocyte protease inhibitor: a macrophage product induced by and antagonistic to bacterial lipopolysaccharide. *Cell* 88: 417-426.
5. Nguyen, H., Teskey, L., Lin, R. and Hiscott, J. 1999. Identification of the secretory leukocyte protease inhibitor (SLPI) as a target of IRF-1 regulation. *Oncogene* 18: 5455-5463.

CHROMOSOMAL LOCATION

Genetic locus: SLPI (human) mapping to 20q13.12.

PRODUCT

SLPI 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 SLPI shRNA Plasmid (h): sc-42977-SH and SLPI shRNA (h) Lentiviral Particles: sc-42977-V as alternate gene silencing products.

For independent verification of SLPI (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-42977A, sc-42977B and sc-42977C.

PROTOCOLS

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

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

SLPI siRNA (h) is recommended for the inhibition of SLPI 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

SLPI (F-12): sc-373802 is recommended as a control antibody for monitoring of SLPI 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 SLPI gene expression knockdown using RT-PCR Primer: SLPI (h)-PR: sc-42977-PR (20 μ l). 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.