SANTA CRUZ BIOTECHNOLOGY, INC.

Serglycin siRNA (h): sc-44093

BACKGROUND

Proteoglycans stored in the secretory granules of many hematopoietic cells contain a protease-resistant peptide core that may be important for neutralizing hydrolytic enzymes. Serglycin is associated with the macromolecular complex of granzymes and perforin, which may serve as a mediator of granule-mediated apoptosis. Serglycin is a chondroitin sulfate-bearing proteoglycan that functions in the transport of cationic granular proteins. The immune system relies on granule exocytosis as the main pathway for elimination of virus-infected cells and tumor cells by cytotoxic T lymphocytes and natural killer cells, thus indicating an important role for Serglycin in normal immune function.

REFERENCES

1. Raja, S.M., et al. 2002. Cytotoxic cell granule-mediated apoptosis. Characterization of the macromolecular complex of granzyme B with Serglycin. J. Biol. Chem. 277: 49523-49530.
2. Lemansky, P., et al. 2003. Targeting myeloperoxidase to azurophilic granules in HL-60 cells. J. Leukoc. Biol. 74: 542-550.
3. Lieberman, J. 2003. The ABCs of granule-mediated cytotoxicity: new weapons in the arsenal. Nat. Rev. Immunol. 3: 361-370.
4. Schick, B.P., et al. 2003. Serglycin proteoglycan expression and synthesis in embryonic stem cells. Biochim. Biophys. Acta 1593: 259-267.
5. Abrink, M., et al. 2004. Serglycin is essential for maturation of mast cell secretory granule. J. Biol. Chem. 279: 40897-40905.
6. Niemann, C.U., et al. 2004. Localization of Serglycin in human neutrophil granulocytes and their precursors. J. Leukoc. Biol. 76: 406-415.

CHROMOSOMAL LOCATION

Genetic locus: SRGN (human) mapping to 10q22.1.

PRODUCT

Serglycin 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 Serglycin shRNA Plasmid (h): sc-44093-SH and Serglycin shRNA (h) Lentiviral Particles: sc-44093-V as alternate gene silencing products.

For independent verification of Serglycin (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-44093A, sc-44093B and sc-44093C.

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

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

Serglycin (C-11): sc-374657 is recommended as a control antibody for monitoring of Serglycin 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 Serglycin gene expression knockdown using RT-PCR Primer: Serglycin (h)-PR: sc-44093-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Reine, T.M., et al. 2014. Serglycin secretion is part of the inflammatory response in activated primary human endothelial cells *in vitro*. Biochim. Biophys. Acta 1840: 2498-2505.
2. Reine, T.M., et al. 2015. Serglycin in quiescent and proliferating primary endothelial cells. PLoS ONE 10: e0145584.
3. Hjorth, M., et al. 2015. The effect of acute and long-term physical activity on extracellular matrix and serglycin in human skeletal muscle. Physiol. Rep. 3: e12473.
4. Ma, Q., et al. 2020. SRGN, a new identified shear-stress-responsive gene in endothelial cells. Mol. Cell. Biochem. 474: 15-26.

RESEARCH USE

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