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# Lysozyme C siRNA (h): sc-45935

## BACKGROUND

The origins of the lysozyme proteins date back an estimated 400 to 600 million years. Generally, lysozyme genes are relatively small, roughly 10 kilobases in length, and composed of four exons and three introns. Originally a bacteriolytic defensive agent, the function of this family of proteins adapted to serve a digestive function in its present forms. Lysozymes in tissues and body fluids are associated with the monocyte-macrophage system and enhance the activity of immunogens. Lysozyme C belongs to the glycosyl hydrolase 22 family, and newly identified relatives of Lysozyme C appear to possess anti-HIV activity, as well as preserved bacteriolytic function against *Micrococcus lysodeikticus*. Lysozyme C is capable of both hydrolysis and transglycosylation and also a slight esterase activity. It acts rapidly on both peptide-substituted and unsubstituted peptidoglycan, and slowly on chitin oligosaccharides. Lysozyme C defects are a cause of amyloidosis VIII, also called familial visceral or Ostertag-type amyloidosis.

## REFERENCES

1. Canfield, R.E., et al. 1971. Primary structure of lysozymes from man and goose. *Nature New Biol.* 232: 16-17.
2. Peters, C.W., et al. 1989. The human lysozyme gene. Sequence organization and chromosomal localization. *Eur. J. Biochem.* 182: 507-516.
3. Irwin, D.M., et al. 1996. Isolation and characterization of vertebrate lysozyme genes. *EXS* 75: 225-241.
4. Qasba, P.K., et al. 1997. Molecular divergence of lysozymes and  $\alpha$ -lactalbumin. *Crit. Rev. Biochem. Mol. Biol.* 32: 255-306.
5. Lee-Huang, S., et al. 1999. Lysozyme and RNases as anti-HIV components in  $\beta$ -core preparations of human chorionic gonadotropin. *Proc. Natl. Acad. Sci. USA* 196: 2678-2681.
6. Fujiki, K., et al. 2000. Molecular cloning of carp (*Cyprinus carpio*) leucocyte cell-derived chemotaxin 2, glia maturation factor-, CD45 and Lysozyme C by use of suppression subtractive hybridisation. *Fish Shellfish Immunol.* 10: 643-650.

## CHROMOSOMAL LOCATION

Genetic locus: LYZ (human) mapping to 12q15.

## PRODUCT

Lysozyme C 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Lysozyme C shRNA Plasmid (h): sc-45935-SH and Lysozyme C shRNA (h) Lentiviral Particles: sc-45935-V as alternate gene silencing products.

For independent verification of Lysozyme C (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-45935A, sc-45935B and sc-45935C.

## RESEARCH USE

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

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

## APPLICATIONS

Lysozyme C siRNA (h) is recommended for the inhibition of Lysozyme C 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  $\mu$ M in 66  $\mu$ 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

Lysozyme C (E-5): sc-518012 is recommended as a control antibody for monitoring of Lysozyme C 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Lysozyme C gene expression knockdown using RT-PCR Primer: Lysozyme C (h)-PR: sc-45935-PR (20  $\mu$ l, 598 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.