

LAMP-1 siRNA (m): sc-35790

BACKGROUND

Lysosome-associated membrane proteins (LAMP) are glycosylated type I membrane proteins that play a role in the biogenesis of the pigment melanin. LAMP-1 (also designated CD107a) and LAMP-2 (also designated CD107b) are involved in a variety of functions, including cellular adhesion, and are thought to participate in the process of tumor invasion and metastasis. Newly synthesized LAMP-1 and LAMP-2 proteins are sorted at the *trans*-Golgi network and are transported intracellularly via a pathway that is distinct from the Clathrin-coated vesicles used for the mannose-6 phosphate receptor. LAMP-1 is expressed on the surface of Thrombin-activated but not resting platelets, and it is thought to be involved in the adhesive, prothrombic properties of these cells. Both LAMP-1 and LAMP-2 are involved in maintaining lysosome acidity and protecting the lysosomal membranes from autodigestion, and their expression is increased in patients with lysosomal storage disorders.

REFERENCES

1. Febbraio, M., et al. 1990. Identification and characterization of LAMP-1 as an activation-dependent platelet surface glycoprotein. *J. Biol. Chem.* 265: 18531-18537.
2. Salopek, T.G., et al. 1996. Induction of melanogenesis during the various melanoma growth phases and the role of tyrosinase, lysosome-associated membrane proteins, and p90 calnexin in the melanogenesis cascade. *J. Investig. Dermatol. Symp. Proc.* 1: 195-202.
3. Kannan, K., et al. 1996. Lysosome-associated membrane proteins h-LAMP1 (CD107a) and h-LAMP2 (CD107b) are activation-dependent cell surface glycoproteins in human peripheral blood mononuclear cells which mediate cell adhesion to vascular endothelium. *Cell. Immunol.* 171: 10-19.

CHROMOSOMAL LOCATION

Genetic locus: Lamp1 (mouse) mapping to 8 A1.1.

PRODUCT

LAMP-1 siRNA (m) 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 LAMP-1 shRNA Plasmid (m): sc-35790-SH and LAMP-1 shRNA (m) Lentiviral Particles: sc-35790-V as alternate gene silencing products.

For independent verification of LAMP-1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35790A, sc-35790B and sc-35790C.

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

LAMP-1 siRNA (m) is recommended for the inhibition of LAMP-1 expression in mouse 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

LAMP-1 (H4A3): sc-20011 is recommended as a control antibody for monitoring of LAMP-1 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 LAMP-1 gene expression knockdown using RT-PCR Primer: LAMP-1 (m)-PR: sc-35790-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. Tsukamoto, S., et al. 2013. Functional analysis of lysosomes during mouse preimplantation embryo development. *J. Reprod. Dev.* 59: 33-39.
2. Nowosad, A., et al. 2020. p27 controls regulator and mTOR activity in amino acid-deprived cells to regulate the autophagy-lysosomal pathway and coordinate cell cycle and cell growth. *Nat. Cell Biol.* 22: 1076-1090.

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.