



LBP siRNA (m): sc-146662

BACKGROUND

Lipopolysaccharide-binding protein (LBP) is essential for the rapid induction of an inflammatory response in the presence of small amounts of lipopolysaccharide (LPS) or Gram-negative bacteria. During Gram-negative bacterial infections, membrane associated LPS, the principal stimulator of the innate immune system, is bound by the acute-phase reactant LBP. Secretion of LBP sensitizes the immune system to endotoxin, enhances the neutralization of endotoxin by high density lipoprotein and, at elevated levels, protects against sepsis. The human LBP sequence consists of a 25-residue signal sequence followed by a 452-residue mature protein containing four cysteine residues and five putative glycosylation sites. During inflammation, LBP is secreted by hepatic cells and intestinal epithelial cells. LPS bound to LBP through lipid A moieties is transferred to LPS receptors (CD14) on the surface of macrophages or to high-density lipoprotein (HDL) particles.

REFERENCES

- Schumann, R.R., Leong, S.R., Flaggs, G.W., Gray, P.W., Wright, S.D., Mathison, J.C., Tobias, P.S. and Ulevitch, R.J. 1990. Structure and function of lipopolysaccharide binding protein. *Science* 249: 1429-1431.
- Jack, R.S., Fan, X., Bernheiden, M., Rune, G., Ehlers, M., Weber, A., Kirsch, G., Mentel, R., Füll, B., Freudenberg, M., Schmitz, G., Stelter, F. and Schutt, C. 1997. Lipopolysaccharide-binding protein is required to combat a murine Gram-negative bacterial infection. *Nature* 389: 742-745.
- Nakatomi, K., Aida, Y., Kusumoto, K., Pabst, M.J. and Maeda, K. 1998. Neutrophils responded to immobilized lipopolysaccharide in the absence of lipopolysaccharide-binding protein. *J. Leukoc. Biol.* 64: 177-184.
- Tapping, R.I., Orr, S.L., Lawson, E.M., Soldau, K. and Tobias, P.S. 1999. Membrane-anchored forms of lipopolysaccharide (LPS)-binding protein do not mediate cellular responses to LPS independently of CD14. *J. Immunol.* 162: 5483-5489.
- Veugdenhil, A.C., Snoek, A.M., Greve, J.W. and Buurman, W.A. 2000. Lipopolysaccharide-binding protein is vectorially secreted and transported by cultured intestinal epithelial cells and is present in the intestinal mucus of mice. *J. Immunol.* 165: 4561-4566.

CHROMOSOMAL LOCATION

Genetic locus: Lbp (mouse) mapping to 2 H1.

PRODUCT

LBP 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 LBP shRNA Plasmid (m): sc-146662-SH and LBP shRNA (m) Lentiviral Particles: sc-146662-V as alternate gene silencing products.

For independent verification of LBP (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-146662A, sc-146662B and sc-146662C.

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

LBP siRNA (m) is recommended for the inhibition of LBP 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LBP gene expression knockdown using RT-PCR Primer: LBP (m)-PR: sc-146662-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.

PROTOCOLS

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