SANTA CRUZ BIOTECHNOLOGY, INC.

LPO siRNA (m): sc-60963

BACKGROUND

Lactoperoxidase is an antibacterial agent in bovine milk. The heme protein lactoperoxidase (LPO), also referred to as salivary peroxidase (SPO), is an oxidoreductase secreted into milk. LPO, a 712 amino acid protein, belongs to the XPO subfamily of the peroxidase family. It is expressed in mammary and salivary glands, and in the presence of H_2O_2, LPO acts as a catalyst for the oxidation of many phenols and aromatic amines. It is crucial for protecting the lactating mammary gland and intestinal tract of newborn infants against microorganisms. LPO binds one calcium ion per heterodimer and one heme B (iron-protoporphyrin IX) group covalently per heterodimer. The LPO gene, which spans 28 kb, is similar in gene organization and sequence to the peroxidase genes MPO and EPX, suggesting the possibility that these genes evolved from a common ancestral gene. The LPO and MPO genes are arranged in a tail-to-tail manner on chromosome 17q22.

REFERENCES

1. Dull, T.J., et al. 1990. Molecular cloning of cDNAs encoding bovine and human lactoperoxidase. DNA Cell Biol. 9: 499-509.
2. Kiser, C., et al. 1996. Cloning and sequence analysis of the human salivary peroxidase-encoding cDNA. Gene 173: 261-264.
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4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 150205. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Ihalin, R., et al. 2005. Origin, structure, and biological activities of peroxidases in human saliva. Arch. Biochem. Biophys. 445: 261-268.
6. Nlend, M.C., et al. 2005. Role of sulfated tyrosines of thyroglobulin in thyroid hormonosynthesis. Endocrinology 146: 4834-4843.
7. Shin, K., et al. 2005. Effects of orally administered bovine lactoferrin and lactoperoxidase on influenza virus infection in mice. J. Med. Microbiol. 54: 717-723.
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CHROMOSOMAL LOCATION

Genetic locus: Lpo (mouse) mapping to 11 C.

PRODUCT

LPO 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LPO shRNA Plasmid (m): sc-60963-SH and LPO shRNA (m) Lentiviral Particles: sc-60963-V as alternate gene silencing products.

For independent verification of LPO (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-60963A, sc-60963B and sc-60963C.

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LPO gene expression knockdown using RT-PCR Primer: LPO (m)-PR: sc-60963-PR (20 µl). 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.