

## LIPH siRNA (h): sc-77880

### BACKGROUND

LIPH (lipase, member H) is also known as AH, LPD (lipase-related protein), Phospholipase A1 member B or membrane-associated phosphatidic acid-selective phospholipase A1- $\alpha$ , and is a 451 amino acid protein. LIPH is a member of the triglyceride lipase family and is highly expressed in colon, prostate, kidney, pancreas, ovary, testis, intestine, lung and pancreas. LIPH is also expressed in hair, primarily localized to stem cell-rich bulge regions of hair follicles. The ability of LIPH to regulate hair growth may be because LIPH produces LPA (lysophosphatidic acid) by hydrolyzing PA (phosphatidic acid). LPA then activates P2Y5, another hair follicle protein, which is thought to be important for hair growth regulation. In cells, LIPH associates with the peripheral membrane and is secreted just outside of it. Genetic defects in the gene encoding LIPH are associated with hypotrichosis and alopecia, both of which affect hair growth, implying that LIPH may be an important enzyme in hair growth regulation.

### REFERENCES

1. Jin, W., et al. 2002. Lipase H, a new member of the triglyceride lipase family synthesized by the intestine. *Genomics* 80: 268-273.
2. Kazantseva, A., et al. 2006. Human hair growth deficiency is linked to a genetic defect in the phospholipase gene LIPH. *Science* 314: 982-985.
3. Ali, G., et al. 2007. A mutation in the lipase H (LIPH) gene underlie autosomal recessive hypotrichosis. *Hum. Genet.* 121: 319-325.
4. Aoki, J., et al. 2008. Two pathways for lysophosphatidic acid production. *Biochim. Biophys. Acta* 1781: 513-518.
5. Shimomura, Y., et al. 2009. Mutations in the lipase H gene underlie autosomal recessive woolly hair/hypotrichosis. *J. Invest. Dermatol.* 129: 622-628.
6. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 607365. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

### CHROMOSOMAL LOCATION

Genetic locus: LIPH (human) mapping to 3q27.2.

### PRODUCT

LIPH 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 LIPH shRNA Plasmid (h): sc-77880-SH and LIPH shRNA (h) Lentiviral Particles: sc-77880-V as alternate gene silencing products.

For independent verification of LIPH (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-77880A, sc-77880B and sc-77880C.

### PROTOCOLS

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

### 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

LIPH siRNA (h) is recommended for the inhibition of LIPH 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.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LIPH gene expression knockdown using RT-PCR Primer: LIPH (h)-PR: sc-77880-PR (20  $\mu$ 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.