SANTA CRUZ BIOTECHNOLOGY, INC.

# $LTC_4$ synthase siRNA (h): sc-40727

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Leukotrienes (LT) constitute a family of bioactive compounds mainly involved in inflammatory and immunological responses. LTs are produced via an unstable intermediate, $LTA_4$ which is synthesized by the action of arachidonate 5-lipoxygenase, a calcium-dependent enzyme. $LTA_4$ is converted to either $LTB_4$ by cytosolic $LTA_4$ hydrolase or to $LTC_4$ by $LTC_4$ synthase present in the microsomal fraction. Certain immunocompetent myeloid cells, such as eosinophils, basophils and mast cells, have a large capacity to synthesize the potent proinflammatory and spasmogenic mediator $LTC_4$ via a specific microsomal glutathione S-transferase termed $LTC_4$ synthase. $LTC_4$ synthase is the rate-limiting enzyme in the cysteinyl LT synthesis and is responsible for the biosynthesis of cysteinyl leukotrienes that participate in allergic and asthmatic inflammation. Enhanced expression of the $LTC_4$ synthase is due to overactive transcription of an allelic variant associated with aspirin-intolerant asthma.

## REFERENCES


1. Shimizu, T. 1988. Enzymes functional in the syntheses of leukotrienes and related compounds. Int. J. Biochem. 20: 661-666.
2. Surapureddi, S., et al. 2000. Colocalization of leukotriene C synthase and microsomal glutathione S-transferase elucidated by indirect immunofluorescence analysis. FEBS Lett. 480: 239-243.
3. Babu, K.S., et al. 2000. Aspirin and asthma. Chest 118: 1470-1476.
4. Zhao, J.L., et al. 2000. Cell-specific transcription of leukotriene $C_4$ synthase involves a Kruppel-like transcription factor and Sp1. J. Biol. Chem. 275: 8903-8910.
5. Sanak, M., et al. 2000. Enhanced expression of the leukotriene $C_4$ synthase due to overactive transcription of an allelic variant associated with aspirin-intolerant asthma. Am. J. Respir. Cell Mol. Biol. 23: 290-296.


## CHROMOSOMAL LOCATION

Genetic locus: LTC4S (human) mapping to 5q35.3.

## PRODUCT

$LTC_4$ synthase siRNA (h) is a target-specific 19-25 nt siRNA 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 $LTC_4$ synthase shRNA Plasmid (h): sc-40727-SH and $LTC_4$ synthase shRNA (h) Lentiviral Particles: sc-40727-V as alternate gene silencing 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 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

$LTC_4$ synthase siRNA (h) is recommended for the inhibition of $LTC_4$ synthase 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 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 $LTC_4$ synthase gene expression knockdown using RT-PCR Primer: $LTC_4$ synthase (h)-PR: sc-40727-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Tang, F., et al. 2015. Cysteinyl leukotrienes mediate lymphokine killer activity induced by NKG2D and IL-15 in cytotoxic T cells during celiac disease. J. Exp. Med. 212: 1487-1495.


## 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.