

LTC₄ synthase (S-18)-R: sc-22564-R

BACKGROUND

Leukotrienes (LT) constitute a family of bioactive compounds mainly involved in inflammatory and immunological responses. LTs are produced via an unstable intermediate, LTA₄ which is synthesized by the action of arachidonate 5-lipoxygenase, a calcium-dependent enzyme. LTA₄ is converted to either LTB₄ by cytosolic LTA₄ hydrolase or to LTC₄ by LTC₄ 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 LTC₄ via a specific microsomal glutathione S-transferase termed LTC₄ synthase. LTC₄ 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 LTC₄ 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 C₄ synthase involves a Krüppel-like transcription factor and Sp1. *J. Biol. Chem.* 275: 8903-8910.
5. Sanak, M., et al. 2000. Enhanced expression of the leukotriene C₄ synthase due to overactive transcription of an allelic variant associated with aspirin-intolerant asthma. *Am. J. Respir. Cell Mol. Biol.* 23: 290-296.
6. Sjöstrom, M., et al. 2001. Human umbilical vein endothelial cells generate leukotriene C₄ via microsomal glutathione S-transferase type 2 and express the CysLT₁ receptor. *Eur. J. Biochem.* 268: 2578-2586.

CHROMOSOMAL LOCATION

Genetic locus: LTC4S (human) mapping to 5q35.3; Ltc4s (mouse) mapping to 11 B1.3.

SOURCE

LTC₄ synthase (S-18)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of LTC₄ synthase of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22564 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

LTC₄ synthase (S-18)-R is recommended for detection of LTC₄ synthase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

LTC₄ synthase (S-18)-R is also recommended for detection of LTC₄ synthase in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for LTC₄ synthase siRNA (h): sc-40727, LTC₄ synthase siRNA (m): sc-40728, LTC₄ synthase shRNA Plasmid (h): sc-40727-SH, LTC₄ synthase shRNA Plasmid (m): sc-40728-SH, LTC₄ synthase shRNA (h) Lentiviral Particles: sc-40727-V and LTC₄ synthase shRNA (m) Lentiviral Particles: sc-40728-V.

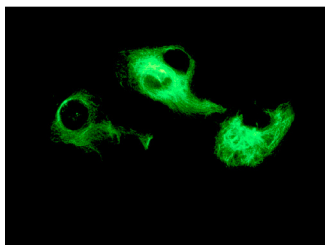
Molecular Weight of LTC₄ synthase: 17 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



LTC₄ synthase (S-18): sc-22564. Immunofluorescence staining of methanol-fixed U-87 MG cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Yang, H., et al. 2011. Cysteinyl leukotrienes synthesis is involved in aristolochic acid I-induced apoptosis in renal proximal tubular epithelial cells. *Toxicology* 287: 38-45.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.