

LRAT (N-15): sc-49223

BACKGROUND

Lecithin retinol acyltransferase (LRAT) is a membrane-bound enzyme that catalyzes the transfer of an acyl group from the sn-1 position of lecithin to vitamin A, which generates all-*trans*-retinyl esters (tREs) in the liver, some extrahepatic tissues (such as the lung) and retinal pigmented epithelium. LRAT can also exchange palmitoyl groups between RPE65, a tRE-binding protein essential for vision, and tREs, which is important for the operation of the visual pathway. LRAT is essential for the dietary mobilization, transport and storage of vitamin A, as well as the synthesis of the visual pigment chromophore. LRAT monomers interact in membranes to form homodimers through disulfide bond formation. A loss of LRAT correlates with an early onset severe retinal dystrophy and severe retinyl ester deprivation, while a reduction in LRAT expression may be associated with invasive bladder cancer.

REFERENCES

1. Jurukovski, V. and Simon, M. 1999. Reduced lecithin:retinol acyl transferase activity in cultured squamous cell carcinoma lines results in increased substrate-driven retinoic acid synthesis. *Biochim. Biophys. Acta* 1436: 479-490.
2. Mondal, M.S., Ruiz, A., Hu, J., Bok, D. and Rando, R.R. 2001. Two histidine residues are essential for catalysis β transferase. *FEBS Lett.* 489: 14-18.
3. Fishkin, N., Yefidoff, R., Gollipalli, D.R. and Rando, R.R. 2005. On the mechanism of isomerization of all-*trans*-retinol esters to 11-*cis*-retinol in retinal pigment epithelial cells: 11-fluoro-all-*trans*-retinol as substrate/ inhibitor in the visual cycle. *Bioorg. Med. Chem.* 13: 5189-5194.
4. Harrison, E.H. 2005. Mechanisms of digestion and absorption of dietary vitamin A. *Annu. Rev. Nutr.* 25: 87-103.
5. Trevino, S.G., Schuschereba, S.T., Bowman, P.D. and Tsin, A. 2005. Lecithin:retinol acyltransferase in ARPE-19. *Exp. Eye Res.* 80: 897-900.

CHROMOSOMAL LOCATION

Genetic locus: LRAT (human) mapping to 4q32.1.

SOURCE

LRAT (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of LRAT of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-49223 P, (100 μ g |peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-49223 X, 200 μ g/0.1 ml.

STORAGE

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

APPLICATIONS

LRAT (N-15) is recommended for detection of LRAT of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

LRAT (N-15) is also recommended for detection of LRAT in additional species, including porcine.

Suitable for use as control antibody for LRAT siRNA (h): sc-60964, LRAT shRNA Plasmid (h): sc-60964-SH and LRAT shRNA (h) Lentiviral Particles: sc-60964-V.

LRAT (N-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of LRAT monomer: 25 kDa.

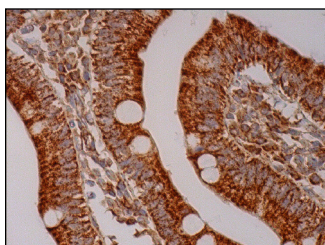
Molecular Weight of LRAT dimer: 50-65 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



LRAT (N-15): sc-49223. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells and interstitial cells.

RESEARCH USE

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

PROTOCOLS

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