SANTA CRUZ BIOTECHNOLOGY, INC.

LRAT (M-48): sc-99015

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., et al. 2001. Two histidine residues are essential for catalysis by lecithin retinol acyl transferase. FEBS Lett. 489: 14-18.
3. Fishkin, N., et al. 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., et al. 2005. Mechanisms of digestion and absorption of dietary vitamin A. Annu. Rev. Nutr. 25: 87-103.
5. Trevino, S.G., et al. 2005. Lecithin:retinol acyltransferase in ARPE-19. Exp. Eye Res. 80: 897-900.
6. Kaschula, C.H., et al. 2005. Acyl CoA:retinol acyltransferase (ARAT) activity is present in bovine retinal pigment epithelium. Exp. Eye Res. 82: 111-121.
7. O'Byrne, S.M., et al. 2005. Retinoid absorption and storage is impaired in mice lacking lecithin:retinol acyltransferase (LRAT). J. Biol. Chem. 280: 35647-35657.
8. Mata, N.L., et al. 2005. Chicken retinas contain a retinoid isomerase activity that catalyzes the direct conversion of all-*trans*-retinol to 11-*cis*-retinol. Biochemistry 44: 11715-11721.

CHROMOSOMAL LOCATION

Genetic locus: LRAT (human) mapping to 4q32.1; Lrat (mouse) mapping to 3 E3.

SOURCE

LRAT (M-48) is a rabbit polyclonal antibody raised against amino acids 49-96 mapping within an internal region of LRAT of mouse origin.

PRODUCT

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

APPLICATIONS

LRAT (M-48) is recommended for detection of LRAT of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

LRAT (M-48) is also recommended for detection of LRAT in additional species, including bovine and porcine.

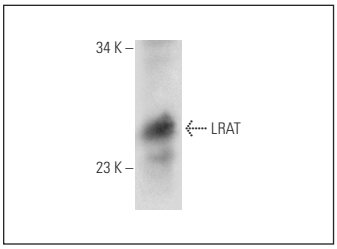
Suitable for use as control antibody for LRAT siRNA (h): sc-60964, LRAT siRNA (m): sc-60965, LRAT shRNA Plasmid (h): sc-60964-SH, LRAT shRNA Plasmid (m): sc-60965-SH, LRAT shRNA (h) Lentiviral Particles: sc-60964-V and LRAT shRNA (m) Lentiviral Particles: sc-60965-V.

Molecular Weight of LRAT monomer: 25 kDa.

Molecular Weight of LRAT dimer: 50-65 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or mouse testis extract: sc-2405.

DATA



LRAT (M-48): sc-99015. Western blot analysis of LRAT expression in mouse testis tissue extract.

STORAGE

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

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.