SANTA CRUZ BIOTECHNOLOGY, INC.

# LRAT (M34-P1F10): sc-101391

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., et al. 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.


## CHROMOSOMAL LOCATION

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

## SOURCE

LRAT (M34-P1F10) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to amino acids 190-199 of LRAT of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LRAT (M34-P1F10) is available conjugated to agarose (sc-101391 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-101391 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-101391 PE), fluorescein (sc-101391 FITC), Alexa Fluor® 488 (sc-101391 AF488), Alexa Fluor® 546 (sc-101391 AF546), Alexa Fluor® 594 (sc-101391 AF594) or Alexa Fluor® 647 (sc-101391 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-101391 AF680) or Alexa Fluor® 790 (sc-101391 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.



## APPLICATIONS

LRAT (M34-P1F10) 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).

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.

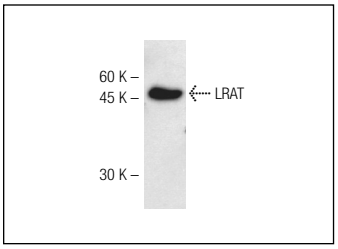
Molecular Weight of LRAT dimer: 50-65 kDa.

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

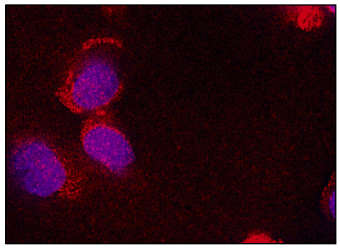
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA




LRAT (M34-P1F10): sc-101391. Western blot analysis of LRAT expression in HeLa whole cell lysate.



LRAT (M34-P1F10): sc-101391. Immunofluorescence staining of methanol-fixed HeLa (log phase) cells showing cytoplasmic staining.

## 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 for detailed protocols and support products.