

# RETSAT (T-14): sc-136835

## BACKGROUND

RETSAT (retinol saturase (all-*trans*-retinol 13,14-reductase)), also known as all-*trans*-13,14-dihydroretinol saturase, is a 610 amino acid peripheral membrane protein of the endoplasmic reticulum that belongs to the carotenoid/retinoid oxidoreductase family and CrtISO subfamily. RETSAT saturates 13-14 double bonds of all-*trans*-retinol to form all-*trans*-13,14-dihydroretinol, and is implicated in both adipogenesis and vitamin A metabolism. Existing as two alternatively spliced isoforms, RETSAT is directly regulated by PPAR $\gamma$  and is induced during apoptosis. Considered a potential target for therapeutic intervention in metabolic disease, RETSAT is encoded by a gene located on human chromosome 2, which consists of 237 million bases, encodes over 1,400 genes and makes up approximately 8% of the human genome. A number of genetic diseases are linked to genes on chromosome 2 including Harlequin ichthyosis, sitosterolemia and Alström syndrome.

## REFERENCES

1. Shulenin, S., et al. 2001. An ATP-binding cassette gene (ABCG5) from the ABCG (White) gene subfamily maps to human chromosome 2p21 in the region of the Sitosterolemia locus. *Cytogenet. Cell Genet.* 92: 204-208.
2. Hearn, T., et al. 2002. Mutation of ALMS1, a large gene with a tandem repeat encoding 47 amino acids, causes Alström syndrome. *Nat. Genet.* 31: 79-83.
3. Moise, A.R., et al. 2004. Identification of all-*trans*-retinol:all-*trans*-13,14-dihydroretinol saturase. *J. Biol. Chem.* 279: 50230-50242.
4. Kelsell, D.P., et al. 2005. Mutations in ABCA12 underlie the severe congenital skin disease harlequin ichthyosis. *Am. J. Hum. Genet.* 76: 794-803.
5. Boon Yin, K., et al. 2008. The PPAR $\gamma$  coding region and its role in visceral obesity. *Biochem. Biophys. Res. Commun.* 371: 177-179.
6. Schupp, M., et al. 2009. Retinol saturase promotes adipogenesis and is downregulated in obesity. *Proc. Natl. Acad. Sci. USA* 106: 1105-1110.

## CHROMOSOMAL LOCATION

Genetic locus: RETSAT (human) mapping to 2p11.2; Retsat (mouse) mapping to 6 C1.

## SOURCE

RETSAT (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of RETSAT of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-136835 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

RETSAT (T-14) is recommended for detection of RETSAT isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

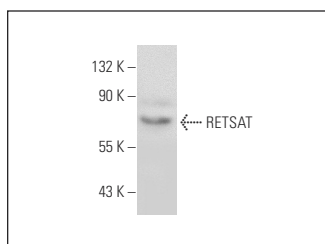
Suitable for use as control antibody for RETSAT siRNA (h): sc-94289, RETSAT siRNA (m): sc-152818, RETSAT shRNA Plasmid (h): sc-94289-SH, RETSAT shRNA Plasmid (m): sc-152818-SH, RETSAT shRNA (h) Lentiviral Particles: sc-94289-V and RETSAT shRNA (m) Lentiviral Particles: sc-152818-V.

Molecular Weight of RETSAT: 67 kDa.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



RETSAT (T-14): sc-136835. Western blot analysis of RETSAT expression in 293T whole cell lysate.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.