# MGAT1 (C-15): sc-32386



The Power to Question

## **BACKGROUND**

Monoacylglycerol O-acyltransferase (MGAT) catalyzes diacylglycerol (a precursor to triacylglycerol) synthesis. MGAT is important in intestinal absorption of dietary fat because resynthesis of triacylglycerol is needed for the assembly of the lipoproteins that transport absorbed fat to tissues. MGAT1 is expressed in stomach, kidney, liver and adipose tissue but is not found in the intestine. On the contrary, MGAT2 (monoacylglycerol O-acyltransferase 2) is highly expressed in the small intestine as well as in kidney, liver, colon, stomach and white adipose tissue. MGAT 3 (monoacylglycerol O-acyltransferase 3) is highly homologous to MGAT1 and MGAT2. The expression of MGAT3 is restricted to the gastrointestinal tract, most concentrated in the ileum.

## **REFERENCES**

- loffe, E., et al. 1996. Essential role for complex N-glycans in forming an organized layer of bronchial epithelium. Proc. Natl. Acad. Sci. USA 93: 11041-11044.
- Yip, B., et al. 1997. Organization of the human β-1,2-N-acetylglucosaminyltransferase I gene (MGAT1), which controls complex and hybrid N-glycan synthesis. Biochem. J. 321: 465-474.
- Yen, C.L., et al. 2002. Identification of a gene encoding MGAT1, a monoacylglycerol acyltransferase. Proc. Natl. Acad. Sci. USA 99: 8512-8517.
- Cheng, D., et al. 2003. Identification of acyl coenzyme A: monoacylglycerol acyltransferase 3, an intestinal specific enzyme implicated in dietary fat absorption. J. Biol. Chem. 278: 13611-13614.
- Cao, J., et al. 2002. Cloning and functional characterization of a mouse intestinal acyl-CoA:monoacylglycerol acyltransferase, MGAT2. J. Biol. Chem. 278: 13860-13866.
- Yen, C.L., et al. 2003. MGAT2, a monoacylglycerol acyltransferase expressed in the small intestine. J. Biol. Chem. 278: 18532-18537.
- Cao, J., et al. 2003. Properties of the mouse intestinal acyl-CoA: monoacylglycerol acyltransferase, MGAT2. J. Biol. Chem. 278: 25657-25663.
- 8. Cao, J., et al. 2004. A predominant role of acyl-CoA: monoacylglycerol acyltransferase-2 in dietary fat absorption implicated by tissue distribution, subcellular localization, and up-regulation by high fat diet. J. Biol. Chem. 279: 18878-18886.
- Shi, S., et al. 2004. Inactivation of the MGAT1 gene in oocytes impairs oogenesis, but embryos lacking complex and hybrid N-glycans develop and implant. Mol. Cell. Biol. 24: 9920-9929. Erratum in Mol. Cell. Biol. 25: 1214.

# CHROMOSOMAL LOCATION

Genetic locus: MOGAT1 (human) mapping to 2q36.1.

## SOURCE

MGAT1 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MGAT1 of human origin.

## **RESEARCH USE**

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

#### **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-32386 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## **APPLICATIONS**

MGAT1 (C-15) is recommended for detection of MGAT1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MGAT1 (C-15) is also recommended for detection of MGAT1 in additional species, including canine and porcine.

Suitable for use as control antibody for MGAT1 siRNA (h): sc-44467, MGAT1 shRNA Plasmid (h): sc-44467-SH and MGAT1 shRNA (h) Lentiviral Particles: sc-44467-V.

Molecular Weight of MGAT: 33 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) 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.

# **STORAGE**

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

#### **PROTOCOLS**

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



Try **MGAT1 (H-6):** sc-376079, our highly recommended monoclonal alternative to MGAT1 (C-15).

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