

MGAT3 (H-45): sc-66964

BACKGROUND

Monoacylglycerol O-acyltransferase (MGAT) catalyzes synthesis of diacylglycerol (a precursor to triacylglycerol). 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 is highly expressed in the small intestine as well as in kidney, liver, colon, stomach and white adipose tissue. MGAT 3 is highly homologous to MGAT1 and 2. The expression of MGAT3 is restricted to the gastrointestinal tract, with highest concentration in the ileum.

REFERENCES

1. Ioffe, 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.
2. 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.
3. Yen, C.L., et al. 2002. Identification of a gene encoding MGAT1, a monoacylglycerol acyltransferase. *Proc. Natl. Acad. Sci. USA* 99: 8512-8517.
4. 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.
5. Cao, J., et al. 2003. Cloning and functional characterization of a mouse intestinal acyl-CoA:monoacylglycerol acyltransferase, MGAT2. *J. Biol. Chem.* 278: 13860-13866.
6. Yen, C.L., et al. 2003. MGAT2, a monoacylglycerol acyltransferase expressed in the small intestine. *J. Biol. Chem.* 278: 18532-18537.
7. 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 upregulation by high fat diet. *J. Biol. Chem.* 279: 18878-18886.
9. 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: MOGAT3 (human) mapping to 7q22.1.

SOURCE

MGAT3 (H-45) is a rabbit polyclonal antibody raised against amino acids 1-45 mapping at the N-terminus of MGAT3 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.

APPLICATIONS

MGAT3 (H-45) is recommended for detection of MGAT3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 μ g per 100–500 μ 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 MGAT3 siRNA (h): sc-44469.

Molecular Weight of MGAT3: 36 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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.

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.