

MGAT3 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP2411A

Product Information

Application	WB, IHC-P, E
Primary Accession	Q09327
Other Accession	NP_002400
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB4847/4848
Calculated MW	61313
Antigen Region	72-102

Additional Information

Gene ID	4248
Other Names	Beta-1, 4-mannosyl-glycoprotein 4-beta-N-acetylglucosaminyltransferase, N-glycosyl-oligosaccharide-glycoprotein N-acetylglucosaminyltransferase III, GNT-III, GlcNAc-T III, N-acetylglucosaminyltransferase III, MGAT3, GGNT3
Target/Specificity	This MGAT3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 72-102 amino acids from the N-terminal region of human MGAT3.
Dilution	WB~~1:1000 IHC-P~~1:100 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MGAT3 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MGAT3 (HGNC:7046)
Synonyms	GGNT3

Function

It is involved in the regulation of the biosynthesis and biological function of glycoprotein oligosaccharides. Catalyzes the addition of N-acetylglucosamine in beta 1-4 linkage to the beta-linked mannose of the trimannosyl core of N-linked sugar chains, called bisecting N-acetylglucosamine (GlcNAc). It is one of the most important enzymes involved in the regulation of the biosynthesis of glycoprotein oligosaccharides. The addition of this bisecting GlcNAc residue alters not only the composition, but also the conformation of the N-glycan. The introduction of the bisecting GlcNAc residue results in the suppression of further processing and elongation of N-glycans, precluding the formation of beta-1,6 GlcNAc branching, catalyzed by MGAT5 since it is unable to use the bisected oligosaccharide as a substrate (PubMed:[19403558](#)). Addition of bisecting N-acetylglucosamine to CDH1/E-cadherin modulates CDH1 cell membrane location (PubMed:[19403558](#)). Inhibits NeuAc-alpha-2,3-Gal-beta-1,4- GlcNAc- formation which modulates sialylation levels and plays a role in cell migration regulation (PubMed:[26801611](#)). In brain, addition of bisecting N-acetylglucosamine to BACE1 blocks its lysosomal targeting in response to oxidative stress and further degradation which increases its location to early endosome and the APP cleavage (By similarity). Adds bisecting GlcNAc residue to complex-type N-linked-glycans attached on fragment crystallizable (Fc) of IgGs. Readily converts fucosylated and non-fucosylated core glycoforms with terminal GlcNAcs on both antennae. Prior galactosylation of GlcNAc on the alpha(1->3) Man branch prevents N-glycan bisection, whereas galactosylation of GlcNAc on the alpha(1->6) Man branch is permissive.

Cellular Location

Golgi apparatus, Golgi stack membrane; Single-pass type II membrane protein. Note=Colocalizes with ST6GAL1 and B4GALT1 in the Golgi stacks of cisternae, including the cis-part of the Golgi stacks

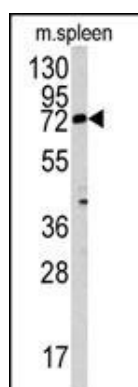
Background

There are believed to be over 100 different glycosyltransferases involved in the synthesis of protein-bound and lipid-bound oligosaccharides. MGAT3 (N-acetylglucosaminyltransferase III) transfers a GlcNAc residue to the beta-linked mannose of the trimannosyl core of N-linked oligosaccharides and produces a bisecting GlcNAc. Expression of this gene may be controlled by a multiple-promoter system.

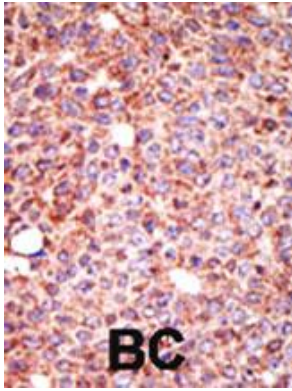
References

- Shibukawa, Y., et al., J. Biol. Chem. 278(5):3197-3203 (2003).
Koyama, N., et al., Eur. J. Biochem. 238(3):853-861 (1996).
Kim, Y.J., et al., Gene 170(2):281-283 (1996).
Ihara, Y., et al., J. Biochem. 113(6):692-698 (1993).

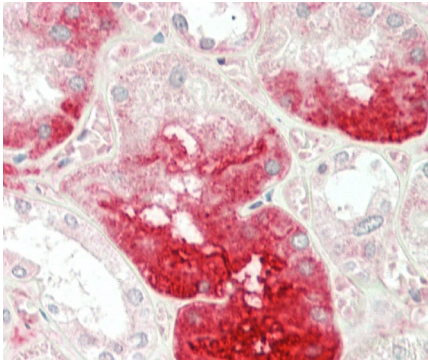
Images



Western blot analysis of MGAT3 antibody (N-term) (Cat.# AP2411a) in mouse spleen tissue lysates (35ug/lane). MGAT3 (arrow) was detected using the purified Pab.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Formalin-fixed and paraffin-embedded H.kidney tissue reacted with MGAT3 Antibody (N-term) (Cat#AP2411a).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.