abcam

ab87977

Anti-MGAT5 antibody [3E9]

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human MGAT5 aa 600 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link Q09328
Carrier free	Yes
Clone number	3E9
Purity	Tissue culture supernatant
Light chain type	kappa
Purification notes	Purified from TCS.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-

Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Recombinant fragment - Human, Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information MGAT5

Function	Catalyzes the addition of N-acetylglucosamine (GlcNAc) in beta 1-6 linkage to the alpha-linked mannose of biantennary N-linked oligosaccharides (PubMed:10395745, PubMed:30140003). Catalyzes an important step in the biosynthesis of branched, complex-type N-glycans, such as those found on EGFR, TGFR (TGF-beta receptor) and CDH2 (PubMed:10395745, PubMed:22614033, PubMed:30140003). Via its role in the biosynthesis of complex N-glycans, plays an

important role in the activation of cellular signaling pathways, reorganization of the actin cytoskeleton, cell-cell adhesion and cell migration. MGAT5-dependent EGFR N-glycosylation enhances the interaction between EGFR and LGALS3 and thereby prevents rapid EGFR endocytosis and prolongs EGFR signaling. Required for efficient interaction between TGFB1 and its receptor. Enhances activation of intracellular signaling pathways by several types of growth factors, including FGF2, PDGF, IGF, TGFB1 and EGF. MGAT5-dependent CDH2 N-glycosylation inhibits CDH2-mediated homotypic cell-cell adhesion and contributes to the regulation of downstream signaling pathways. Promotes cell migration. Contributes to the regulation of the inflammatory response. MGAT5-dependent TCR N-glycosylation enhances the interaction between TCR and LGALS3, limits agonist-induced TCR clustering, and thereby dampens TCR-mediated responses to antigens. Required for normal leukocyte evasation and accumulation at sites of inflammation (By similarity). Inhibits attachment of monocytes to the vascular endothelium and subsequent monocyte diapedesis (PubMed:22614033). Secreted alpha-1,6-mannosylglycoprotein 6-beta-N-acetylglucosaminyltransferase A. Promotes proliferation of umbilical vein endothelial cells and angiogenesis, at least in part by promoting the release of the growth factor FGF2 from the extracellular matrix.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

This product was changed from ascites to tissue culture supernatant on 15 May 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	MGAT5 also known as beta-16-N-acetylglucosaminyltransferase V or GnT-V is an enzyme with a molecular mass of approximately 83 kDa. This enzyme plays a role in the Golgi apparatus where it modifies N-glycans on glycoproteins by adding N-acetylglucosamine to N-glycans. MGAT5 is expressed in various tissues including

	the brain liver and kidneys. Its enzymatic function is essential in creating complex branched glycan structures influencing the cellular surface glycosylation patterns.
Biological function summary	MGAT5 contributes to cellular processes such as cell-cell communication cell migration and signal transduction. These processes are important in tissues where it is expressed. MGAT5 is not part of a complex but works closely with other glycosyltransferases in the glycosylation pathway. Its glycan products interact with lectins and receptors on the cell surface influencing signaling pathways and cellular behavior.
Pathways	MGAT5 is significant in the glycosylation pathway and the PI3K/AKT signaling pathway. In these pathways MGAT5 modifies glycoproteins which can impact receptor function and downstream signaling. It interacts with proteins such as integrins and growth factor receptors affecting cellular responses to environmental cues and influencing growth and differentiation signals.
Associated diseases and disorders	MGAT5 is associated with cancer progression and autoimmune diseases. Altered MGAT5 expression and activity in cancer cells can promote tumor growth and metastasis by enhancing cell invasion and evasion mechanisms. The enzyme links to proteins like TGF-beta receptor and E-cadherin in cancer contributing to the changes in cellular adhesion and signaling that facilitate metastasis. In autoimmune diseases MGAT5 modulates immune cell function impacting disease progression and severity.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

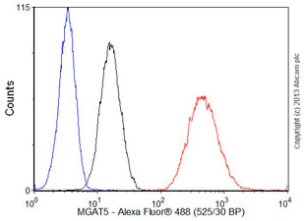
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

2 product images



Flow Cytometry - Anti-MGAT5 antibody [3E9] (ab87977)

MGAT5 Flow Cytometry staining using mouse Anti-MGAT5 antibody

Overlay histogram showing Jurkat cells stained with ab87977 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab87977, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-mouse IgG (H&L) (ab150113) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in Jurkat cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.
This image was generated using the ascites version of the product.

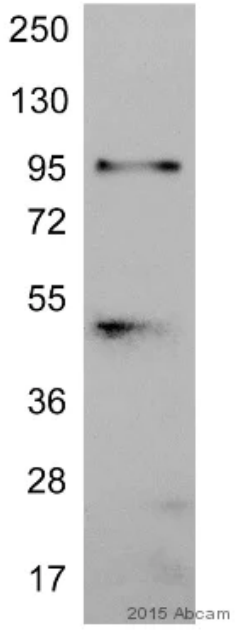


Image is courtesy of a customer review submitted by Armen Petrosyan.

Western blot - Anti-MGAT5 antibody [3E9] (ab87977)

MGAT5 Western blot staining of Human RWPE prostate cells using mouse Anti-MGAT5 antibody

Blocking was via 5% milk in PBST incubated for 1 hour at 22°C
This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-MGAT5 antibody [3E9] (ab87977) at 1/2000 dilution

All lanes:
Human RWPE prostate cells at 20 µg

Secondary

All lanes:
Donkey anti-mouse polyclonal HRP conjugate at 1/10000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 85 kDa

Observed band size: 55 kDa, 95 kDa

Exposure time: 40s

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