

MGAT5 Protein, Human (HEK293, His)

Cat. No.:	HY-P75927
Synonyms:	Alpha-1,6-mannosylglycoprotein 6-beta-N-acetylglucosaminyltransferase A; GNT-V; Secreted GNT-V; MGAT5; GGNT5
Species:	Human
Source:	HEK293
Accession:	Q09328 (L189-L741)
Gene ID:	4249
Molecular Weight:	75 kDa

PROPERTIES

AA Sequence	<pre> L S E V E N W C P H L P W R A K N P Y E E A D H N S L A E I R T D F N I L Y S M M K K H E E F R W M R L R I R R M A D A W I Q A I K S L A E K Q N L E K R K R K K V L V H L G L L T K E S G F K I A E T A F S G G P L G E L V Q W S D L I T S L Y L L G H D I R I S A S L A E L K E I M K K V V G N R S G C P T V G D R I V E L I Y I D I V G L A Q F K K T L G P S W V H Y Q C M L R V L D S F G T E P E F N H A N Y A Q S K G H K T P W G K W N L N P Q Q F Y T M F P H T P D N S F L G F V V E Q H L N S S D I H H I N E I K R Q N Q S L V Y G K V D S F W K N K K I Y L D I I H T Y M E V H A T V Y G S S T K N I P S Y V K N H G I L S G R D L Q F L L R E T K L F V G L G F P Y E G P A P L E A I A N G C A F L N P K F N P P K S S K N T D F F I G K P T L R E L T S Q H P Y A E V F I G R P H V W T V D L N N Q E E V E D A V K A I L N Q K I E P Y M P Y E F T C E G M L Q R I N A F I E K Q D F C H G Q V M W P P L S A L Q V K L A E P G Q S C K Q V C Q E S Q L I C E P S F F Q H L N K D K D M L K Y K V T C Q S S E L A K D I L V P S F D P K N K H C V F Q G D L L L F S C A G A H P R H Q R V C P C R D F I K G Q V A L C K D C L </pre>
Biological Activity	Measured in a cell proliferation assay using MDA-MB-231 cells. The ED ₅₀ for this effect is 0.01096 µg/mL, corresponding to a specific activity is 9.124×10 ⁴ units/mg.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

MGAT5 protein is a key enzyme that catalyzes the addition of N-acetylglucosamine (GlcNAc) in beta 1-6 linkage to the alpha-linked mannose of biantennary N-linked oligosaccharides. This catalytic activity is crucial for the biosynthesis of branched, complex-type N-glycans found on various proteins, including EGFR, TGF β (TGF-beta receptor), and CDH2. Through its involvement in complex N-glycan biosynthesis, MGAT5 plays a pivotal role in cellular signaling pathways, actin cytoskeleton reorganization, cell-cell adhesion, and cell migration. Notably, MGAT5-dependent EGFR N-glycosylation prolongs EGFR signaling by preventing rapid endocytosis. MGAT5 is also essential for efficient interactions between TGF β 1 and its receptor, enhancing intracellular signaling pathways activated by growth factors like FGF2, PDGF, IGF, TGF β 1, and EGF. Additionally, MGAT5-mediated CDH2 N-glycosylation inhibits homotypic cell-cell adhesion, influencing downstream signaling pathways and promoting cell migration. In the immune response, MGAT5-dependent TCR N-glycosylation limits TCR clustering and dampens TCR-mediated responses to antigens, contributing to normal leukocyte evasion and accumulation at inflammatory sites. Moreover, MGAT5 inhibits monocyte attachment to vascular endothelium and subsequent diapedesis, while also promoting proliferation of endothelial cells and angiogenesis by facilitating the release of FGF2 from the extracellular matrix. In summary, MGAT5 emerges as a multifaceted regulator with significant implications in cellular processes, immune responses, and angiogenesis.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA