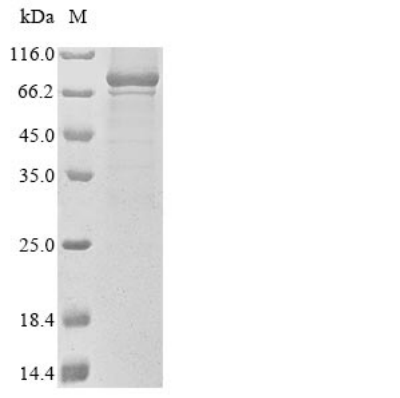
Recombinant Human Alpha-1,3-mannosyl-glycoprotein 4-beta-N-acetylglucosaminyltransferase A (MGAT4A), partial

Product Code	CSB-MP890937HU
Abbreviation	Recombinant Human MGAT4A protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q9UM21
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	LLKELTSKKSLQVPSIYYHLPHLLKNEGSLQPAVQIGNGRTGVSIVMGIPTVKRE VKSYLIETLHSLIDNLYPEEKLDCVIVVFIGETDIDYVHGVVANLEKEFSKEISSGL VEVISPPESYYPDLTNLKETFGDSKERVRWRTKQNLDYCFLMMYAQEKGIYYI QLEDDIIVKQNYFNTIKNFALQLSSEEWMILEFSQLGFIGKMFQAPDLTLIVEFIF MFYKEKPIDWLLDHILWVKVCNPEKDAKHCDRQKANLRIRFRPSLFQHVGLHS SLSGKIQKLTDKDYMKPLLLKIHVNPPAEVSTSLKVYQGHTLEKTYMGEDFFW AITPIAGDYILFKFDKPVNVESYLFHSGNQEHPGDILLNTTVEVLPFKSEGLEISK ETKDKRLEDGYFRIGKFENGVAEGMVDPSLNPISAFRLSVIQNSAVWAILNEIHI KKATN
Research Area	Metabolism
Source	Mammalian cell
Target Names	MGAT4A
Expression Region	93-535aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	56 kDa
Protein Length	Partial

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Human MGAT4A comes from a mammalian cell system and covers amino acid region 93-535. The protein features dual tags—an N-terminal 10xHis-tag and a C-terminal Myc-tag—which help with purification and detection. SDS-PAGE analysis shows the protein maintains a purity level above 85%, making it suitable for research applications. This recombinant protein is intended for research use only and doesn't include the complete sequence.

MGAT4A appears to play an important role in N-glycan branching, a process that seems crucial for proper protein folding and function. The protein acts as a glycosyltransferase, adding N-acetylglucosamine to specific mannose residues on glycoproteins. This modification is likely vital for cellular processes like cell-cell communication and protein stability. That's why MGAT4A has become a protein of interest in studies examining glycosylation pathways and related disorders.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Glycosyltransferase Enzyme Characterization Studies

Researchers can use this recombinant MGAT4A protein to investigate the enzymatic properties and substrate specificity of this N-acetylglucosaminyltransferase under controlled in vitro conditions. The dual His and Myc tags make protein purification and detection more straightforward, allowing scientists to study enzyme kinetics, optimal reaction conditions, and cofactor requirements. Since the protein comes from a mammalian expression system, it's more likely to have proper protein folding and post-translational modifications that may be critical for enzymatic function. Studies like these could help us understand the biochemical mechanisms behind N-glycan biosynthesis pathways.

2. Protein-Protein Interaction Studies

Both the N-terminal His tag and C-terminal Myc tag make this protein well-suited for pull-down assays and co-immunoprecipitation experiments. These approaches might help identify potential binding partners or regulatory proteins that interact with MGAT4A. The tags allow for immobilization on appropriate matrices and detection using tag-specific antibodies, which could lead to discovering protein complexes involved in glycosylation processes. Interaction studies like these may reveal regulatory mechanisms and pathway components that influence how MGAT4A functions in cellular glycan processing.

3. Antibody Development and Validation

This purified recombinant protein works well as an antigen for generating specific antibodies against human MGAT4A or for validating existing antibodies. The high purity level (>85%) and defined protein region (aa 93-535) offer a standardized target for immunization protocols or ELISA-based antibody screening. The dual tags also provide alternative detection methods to confirm antibody specificity and test for cross-reactivity.

4. Structural and Biophysical Analysis

Scientists can apply this recombinant MGAT4A protein in structural biology approaches like X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy to understand the three-dimensional structure of this glycosyltransferase domain. The mammalian expression system should provide properly folded protein that's suitable for biophysical characterization techniques, including dynamic light scattering, thermal stability assays, and circular dichroism spectroscopy. Analysis like this might provide insights into the molecular architecture and conformational properties of this important glycan-processing enzyme.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.