Recombinant ALG1 protein (His tag)

Catalog Number	541150
Synonyms	Asparagine-linked glycosylation protein 1 homolog; Beta-1,4-mannosyltransferase; GDP-Man:GlcNAc2-PP-dolichol mannosyltransferase; GDP-mannose-dolichol diphosphochitobiose mannosyltransferase; Mannosyltransferase-1; MT-1; hMat-1
Species	Human
Expression System	E. coli
Accession	Q9BT22
Molecular Weight	Predictes a molecular mass of 51.80 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 52 kDa band.

Product Information

Sequence Region	24-464
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>87%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 24-464 aa (Q9BT22) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	This recombinant protein product features a stable and soluble fragment (residues 24-464) of human Chitobiosyldiphosphodolichol beta-mannosyltransferase (ALG1), optimized for structural and biochemical studies. It represents a key enzyme in the N-glycosylation pathway, specifically catalyzing the first mannose addition during dolichol-linked oligosaccharide biosynthesis. Chitobiosyldiphosphodolichol beta-mannosyltransferase (ALG1) is an essential mannosyltransferase in the biosynthetic pathway of dolichol-linked oligosaccharides, which serve as glycan precursors for protein asparagine (N)-glycosylation. Operating on the cytoplasmic face of the endoplasmic reticulum membrane as a single-pass membrane protein, ALG1 catalyzes the addition of the first mannose residue to form Man1GlcNAc(2)-PP-dolichol, a critical intermediate that serves as substrate for subsequent enzymes like ALG2 in the pathway. This enzyme plays a fundamental role in the initial stages of oligosaccharide assembly, which ultimately leads to the transfer of completed glycan structures to nascent proteins by oligosaccharyltransferases, making it crucial for proper protein glycosylation and cellular function.