During N-linked glycosylation of proteins, oligosaccharide chains are assembled on the carrier molecule dolichyl pyrophosphate in the following order: 2 molecules of N-acetylglucosamine, 9 molecules of mannose, and 3 molecules of glucose. These 14-residue oligosaccharide cores are then transferred to asparagine residues on nascent polypeptide chains in the endoplasmic reticulum. As proteins progress through the Golgi apparatus, the oligosaccharide cores are modified by trimming and extension to generate a diverse array of glycosylated proteins.ALG8 encodes an ER-membrane-bound alpha 1,3 glucosyltransferase that catalyzes the addition of the second of three glucose moietiesto growing lipid-linked oligosaccharidesin the lumen of the endoplasmic reticulum. The first and third glucose residues are added by Alg6pand Die2p, respectively. Mutants lacking Alg8p produce truncated LLO's with only one glucose residuethat are able to be transferred to proteins with reduced efficiency. Mutations in human ALG8have been implicated in the congenital disorder of glycosylation CDG-Ih.