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.The oligosaccharyl transferase complextransfers 14-sugar branched oligosaccharides from dolichyl pyrophosphate to asparagine residues. The complex contains nine protein subunits: Ost1p, Ost2p, Ost3p, Ost4p, Ost5p, Ost6p, Stt3p, Swp1p, and Wbp1p, all of which are integral membrane proteins of the ER. The OST complex interacts with the Sec61p pore complexinvolved in protein import into the ER.One of the original six OST complex subunits purified, Ost5p was eventually identified as the 9.5 kDa zeta subunitin a synthetic lethal screen in alg5 mutant cells. Individually, deletions of either OST5 or ALG5 have only mild phenotypes, but deletion of both confers a synthetic temperature-sensitiveglycosylation defect at 30&deg C.