about the Cytoplasm-to-vacuole targetingpathway Cytoplasm-to-vacuole targetingis a constitutive and specific form of autophagy that uses autophagosomal-like vesicles for selective transport of hydrolases aminopeptidase Iand alpha-mannosidaseto the vacuole. Unlike autophagy, which is primarily a catabolic process, Cvt is a biosynthetic process. Like autophagosomes, Cvt vesicles form at a structure known as the phagophore assembly site. The PAS structure generates an isolation membrane, which expands and eventually fuses along the edges to complete vesicle formation. At the vacuole, the outer membrane of the Cvt vesicle fuses with the vacuolar membrane, the vesicle is degraded, and the cargos are released and processed into their mature forms by vacuolar peptidases. The Cvt pathway has not been observed outside of yeast, and enzymes specifically involved in this pathway are not well conserved in other organisms.about ATG20 ATG20 encodes a member of the sorting nexin family, which includes proteins that contain a Phox homologyphosphoinositide-binding domain and play a role in membrane protein sorting. The Atg20p PX domain binds phosphatidylinositol 3-phosphate and is required for the protein's localization to the PAS, where Atg20p plays a role in the Cvt pathway. Atg20p also localizes to endosomes, where it functions in endosomal sorting. Null mutations in atg20 cause accumulation of the precursor form of Lap4pin rich media, a hallmark Cvt pathway phenotype, but do not affect autophagy. The role of Atg20p in the Cvt pathway involves interaction with Snx4p; this complex appears to interact with the Atg1p-Atg13p complex via interaction with Atg17p and Atg11p. The Atg20p-Snx4p complex also mediates endosomal sorting of the SNARE Snc1p, which is retrieved from post-Golgi endosomes back to the Golgi; Snc1p is mislocalized to the vacuole in an atg20null mutant. Atg20p homologs are found in other yeast species but have not been found in filamentous fungi or higher eukaryotes.about autophagy nomenclature The initial identification of factors involved in autophagy was carried out by several independent labs, which led to a proliferation of nomenclature for the genes and gene products involved. The differing gene name acronyms from these groups included APG, AUT, CVT, GSA, PAG, PAZ, and PDD. A concerted effort was made in 2003 by the scientists working in the field to unify the nomenclature for these genes, and \"AuTophaGy-related\" genes are now denoted by the letters ATG. In addition to the ATG gene names that have been assigned to S. cerevisiae proteins and their orthologs, several ATG gene names, including ATG25, ATG28, and ATG30, have been used to designate proteins in other ascomycete yeast species for which there is no identifiable equivalent in S. cerevisiae.