Pcl1p and Pcl2p are cyclins that interact with the cyclin-dependent kinasePho85p. They belong to the Pcl1,2 subfamily of cyclins, which also includes Pcl5p, Pcl9p, and Clg1p. Except for Pcl5p, members of the Pcl1,2 subfamily are primarily required for progression through the cell cycle and regulating cell polarity and morphogenesis. Abnormal morphological phenotypes begin to appear in pcl1 pcl2 pcl9 triple mutants, suggesting that members of the Pcl1,2 subfamily share a common function. PCL1 and PCL2 are required for the phosphorylation of key regulators of polarized growth, septin ring assembly, and morphogenesis in G1. Some targets, such as Rga2p and Bni4p, have been shown to be phosphorylated by both Pcl1p-Pho85p and Pcl2p-Pho85p in vitro. Mutations in genes that encode these substrates in combination with a pcl1 pcl2 double mutant result in severe growth defects.Pcl1p and Pcl2p have some redundancy with Cln1p and Cln2p, two G1-cyclins that interact with CDK Cdc28p. Pcl1p and Pcl2p are required for cell cycle progression in the absence of Cln1p and Cln2p; a strain lacking any 3 of the 4 cyclins is still viable. In further support of PCL1 and PCL2 encoding a parallel pathway to CLN1 and CLN2, many substrates of Pcl1p-Pho85p and Pcl2p-Pho85p are also substrates of Cln1p-Cdc28p and/or Cln2p-Cdc28p or have growth defects when mutated in a strain containing a cln1 cln2 double mutant.Corresponding to their role in G1, PCL1 and PCL2 expression and activity peak in G1. Expression of PCL1, like CLN1 and CLN2, is regulated by Swi4p, Bck2p, and the Sin3p-Rpd3p histone deacetylase complex. Consistent with their role in regulating morphogenesis and polarized growth, Pcl1p and Pcl2p are localized to the bud neck and sites of polarized growth.