

Retromers are evolutionarily conserved protein complexes that function in the recycling of materials from endocytic compartments back to the Golgi in eukaryotic cells. Retromers are composed of five subunits and one of these, VPS26C, was shown to be mis-expressed in the root hairs of *atprp3*, an arabidopsis extracellular matrix mutant that exhibits altered root hair growth. Analysis of a *vps26c* null mutant indicated that VPS26c, and presumably retromer function, is also required for the polarized growth of root hairs. Mutant plants will also be grown to seed and compared with wild type plants to determine if other observable phenotypes (leaves, plant height, rosettes etc.) are associated with *vps26c*. To complement these studies we will use RT/PCR to define where VPS26C is expressed during plant growth. Current studies are focused on generating transgenic plants expressing a VPS26C promoter:GFP reporter construct and a VSP26-GFP fusion to confirm the cell types and organs in which VPS26C is expressed and to identify the intracellular localization of VPS26 in root hair cells. The results of these studies are important in understanding VPS26C and retromer function in growing root hairs and may provide valuable evidence for the role of retromers in other processes of plant growth.