



**Figure S1** *Swip* mutants possess normal DA neuron morphology. The left panels show that CEP and ADE neurons and processes are intact in all strains, possessing visibly normal dendrites(arrow) and terminals(arrowheads). On the right, PDE neurons and projections are shown for each strain, where a normal morphology is also evident. For all strains used, fully outcrossed *vt21*, *vt22*, *vt25* and *vt29* were crossed onto a strain bearing an integrated  $p_{dat-1}:GFP$  transgene(BY250, *vtIs7*). *Swip* mutant genotypes were confirmed by *Swip* behavioral tests as the *vtIs7* line shows no paralysis on its own. Anterior is left in all images shown. Scale bar is equal to 50  $\mu$ M.