

Movie M1. SYP121 and KC1 interact in a non-mobile fraction at the cell periphery as indicated by the lack of fluorescence recovery after photobleaching (FRAP) of the bimolecular fluorescence complementation (BiFC) product formed of the SYP121-nYFP and KC1-cYFP fusion proteins. Time-lapse sequence taken from a wild-type *Arabidopsis* root hair co-transfected as in Fig. S2. Frame times are relative to the photobleach period and the area of photobleaching is indicated by the dotted box.. Note the absence of fluorescence associated with the transvacuolar cytoplasmic strands at the root hair tip.

Movie M2. The *syp121* mutation does not affect AKT1 K⁺ channel expression at the root epidermal plasma membrane as assessed by AKT1-GFP fluorescence recovery after photobleaching (FRAP) in an *Arabidopsis syp121* mutant root hair. Time-lapse sequence for the data of Fig. 8C,D. Frame times are relative to the photobleach period.

Movie M3. The *syp121* mutant does not affect AKT1 K⁺ channel expression at the root epidermal plasma membrane as assessed by AKT1-GFP fluorescence loss in photobleaching (FLIP) in an *Arabidopsis syp121* mutant root hair. Time-lapse sequence for the data of Supplementary Fig. 8A,B. Frame times are relative to the photobleach period.