

## **Supplemental Movie Legends**

### **Supplemental Movie 1. Actin Filament Dynamics in the Apical Region of a WT Pollen Tube.**

Movie corresponds to the diagram shown in Supplemental Figure 4B online. Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu\text{m}$ .

### **Supplemental Movie 2. Actin Filament Dynamics in the Apical Region of a WT Pollen Tube.**

Movie corresponds to the diagram shown in Supplemental Figure 4C online. Images collected as described for Supplemental Movie 1 were rotated 45° and then compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu\text{m}$ .

### **Supplemental Movie 3. Actin Filament Dynamics at the Medial Section of a WT Pollen Tube**

Movie corresponds to the diagram shown in Supplemental Figure 4D online. Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu\text{m}$ .

### **Supplemental Movie 4. Actin Filament Dynamics at the Cortical Region of a WT Pollen Tube**

Movie corresponds to the diagram shown in Supplemental Figure 4E online. Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu\text{m}$ .

### **Supplemental Movie 5. Actin Filament Dynamics at the Medial Section of a *vln2 vln5* Pollen Tube**

Movie corresponds to the diagram shown in Figure 2A(b). Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu\text{m}$ .

### **Supplemental Movie 6. Actin Filament Dynamics at the Cortical Region of a *vln2 vln5* Pollen Tube**

Movie corresponds to the diagram shown in Figure 2A(c). Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu\text{m}$ .

**Supplemental Movie 7. Actin Dynamic at the Apical Region of a WT pollen tube**

Movie corresponds to the diagram in shown Figure 2B, upper panel. Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu$ m.

**Supplemental Movie 8. Actin Dynamic at the Apical Region of a *vln2 vln5* Pollen Tube**

Movie corresponds to the diagram shown in Figure 2B, lower panel. Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu$ m.

**Supplemental Movie 9. Actin Filament Dynamics at the Apical Region of a *vln2 vln5* Pollen Tube**

Movie corresponds to the diagram shown in Figure 2C. Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu$ m.

**Supplemental Movie 10. Dynamics of Single Actin Filaments in the Apical Region of a WT Pollen Tube**

Movie corresponds to the diagram shown in Figure 3A. Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 2  $\mu$ m.

**Supplemental Movie 11. Dynamic of Single Actin Filaments in the Apical Region of a *vln2 vln5* Pollen Tube**

Movie corresponds to the diagram shown in Figure 3B. Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 2  $\mu$ m.

**Supplemental Movie 12. Actin Filament Dynamics at the Subapical Region of a WT Pollen Tube**

Movie corresponds to the diagram shown in Figure 5B. Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu$ m.

**Supplemental Movie 13. Actin Filament Dynamics at the Subapical Region of a *vln2 vln5* Pollen Tube**

Movie corresponds to the diagram shown in Figure 5C. Images were collected at 2-s intervals and compressed into a movie with a display rate of 5 frames per s. Scale bar = 5  $\mu$ m.

**Supplemental Movie 14. Dynamic Distribution of YFP-RabA4b-labeled Vesicles in a WT Pollen Tube**

Movie corresponds to the diagram in shown Supplemental Figure 7B online. Images were collected at 1-s intervals and compressed into a movie with a displaying rate of 10 frames per s. Scale bar = 5  $\mu\text{m}$ .

**Supplemental Movie 15. Dynamic Distribution of YFP-RabA4b-labeled Vesicles in *vln2 vln5* Pollen Tube**

Movie corresponds to the diagram shown in Supplemental Figure 7C online. Images were collected at 1-s intervals and compressed into a movie with a display rate of 10 frames per s. Scale bar = 5  $\mu\text{m}$ .