

## **Supplemental Data**

The following materials are available in the online version of this article.

**Supplemental Video S1.** 3D reconstruction of maize PIN1 immunolocalization in the shoot apex of normal maize.

**Supplemental Video S2.** 3D reconstruction of maize PIN1 immunolocalization in the shoot apex of *abph1*.

**Supplemental Figure S1.** Maize PIN1 is detected by an *Arabidopsis* PIN1 antiserum

**Supplemental Figure S2.** *ABPH1* is not induced by auxin.

**Supplemental Figure S3.** Cytokinin treatment induces ZmPIN1a-YFP in the P<sub>0</sub> leaf primordium.

**Supplemental Table S1.** Contents of cytokinins, auxin and related compounds in normal and *abph1* embryos.

**Supplemental Table S2.** Quantification of ZmPIN1a-YFP fluorescence in the SAM of kinetin treated and control seedlings.