

Supplemental videos. Mutations in HD-ZIPII genes cause polarity defects in cotyledons. 3D-reconstruction videos using the Osirix software from image sections of wild-type (A) and *athb4 hat3* (B) cotyledons. Images were taken from 1-day-old seedlings, and correspond to the same seedlings of figure 3 (I, J). Mutant seedlings lack mostly palisade cells and some vascular tissue, suggesting they are missing adaxial identity.