

Fig. S1. Marginal boundary is disrupted in *Lgn-R*. (A) A wild-type leaf (left) compared with *Lgn-R/+* leaves. Sheath tissue extends into the blade (arrowhead) or blade tissue invades the sheath (arrow) indicating that the blade-sheath boundary is not established properly at this region. (B) Cross section of the area marked in A.

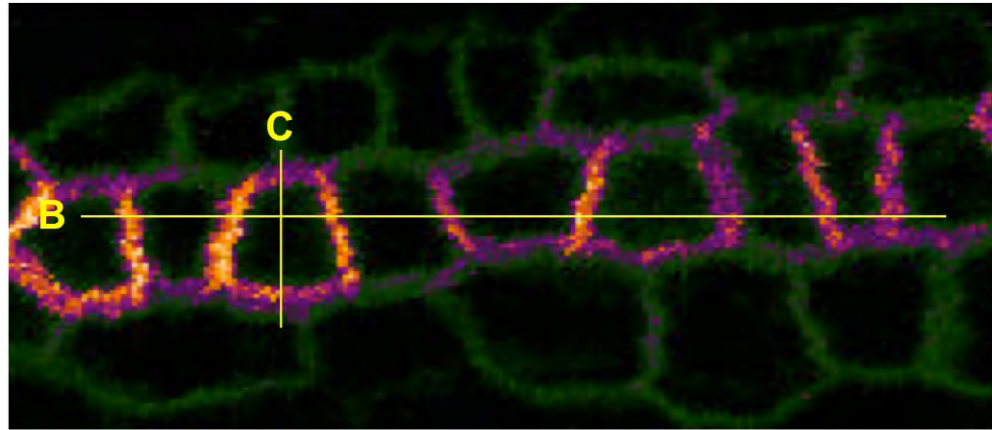
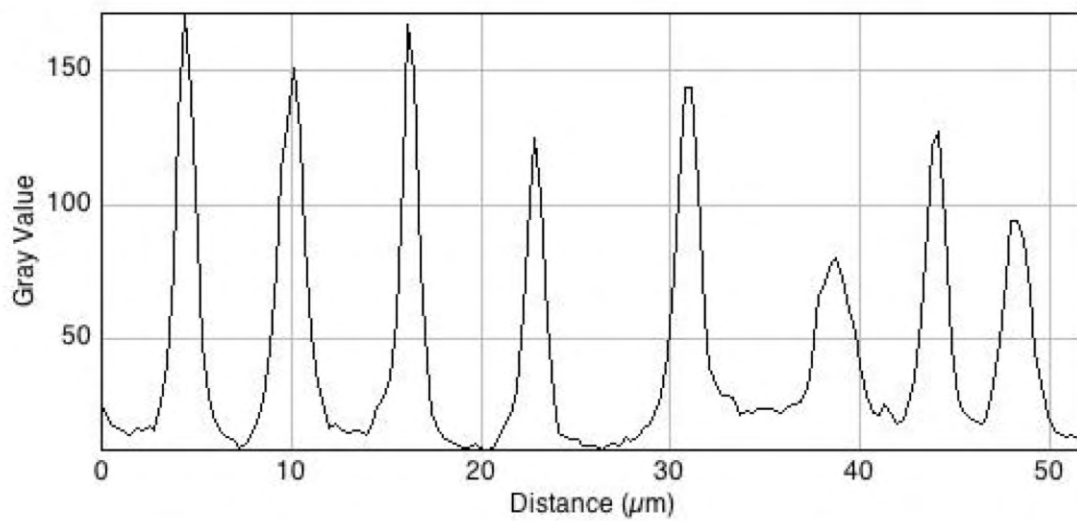
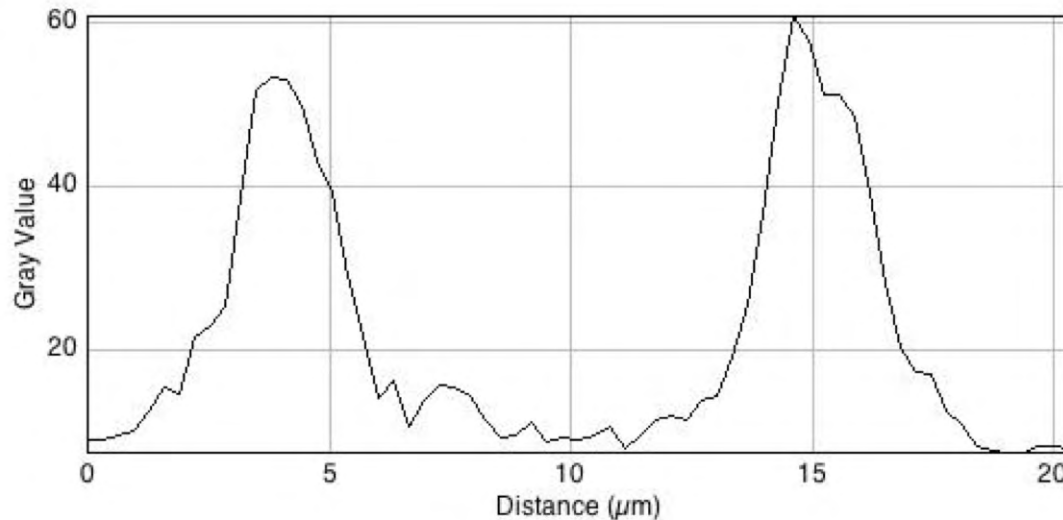
A**B****C**

Fig. S2. ZmPIN1a is localized to the lateral membranes of the preligule cells. (A) Epidermal expression of the ZmPIN1a at the preligular band. The yellow lines indicate the axes along which analysis was carried out (shown in B and C). (B) The image shown in A was processed with ImageJ to calculate the intensity of ZmPIN1a along the median-lateral axis. (C) Representative plot of the intensity of ZmPIN1a along the proximal-distal axis. The y-axis shows the intensity of the signal. Comparing the intensity in B and C indicates that ZmPIN1a is polarized towards the lateral membranes.

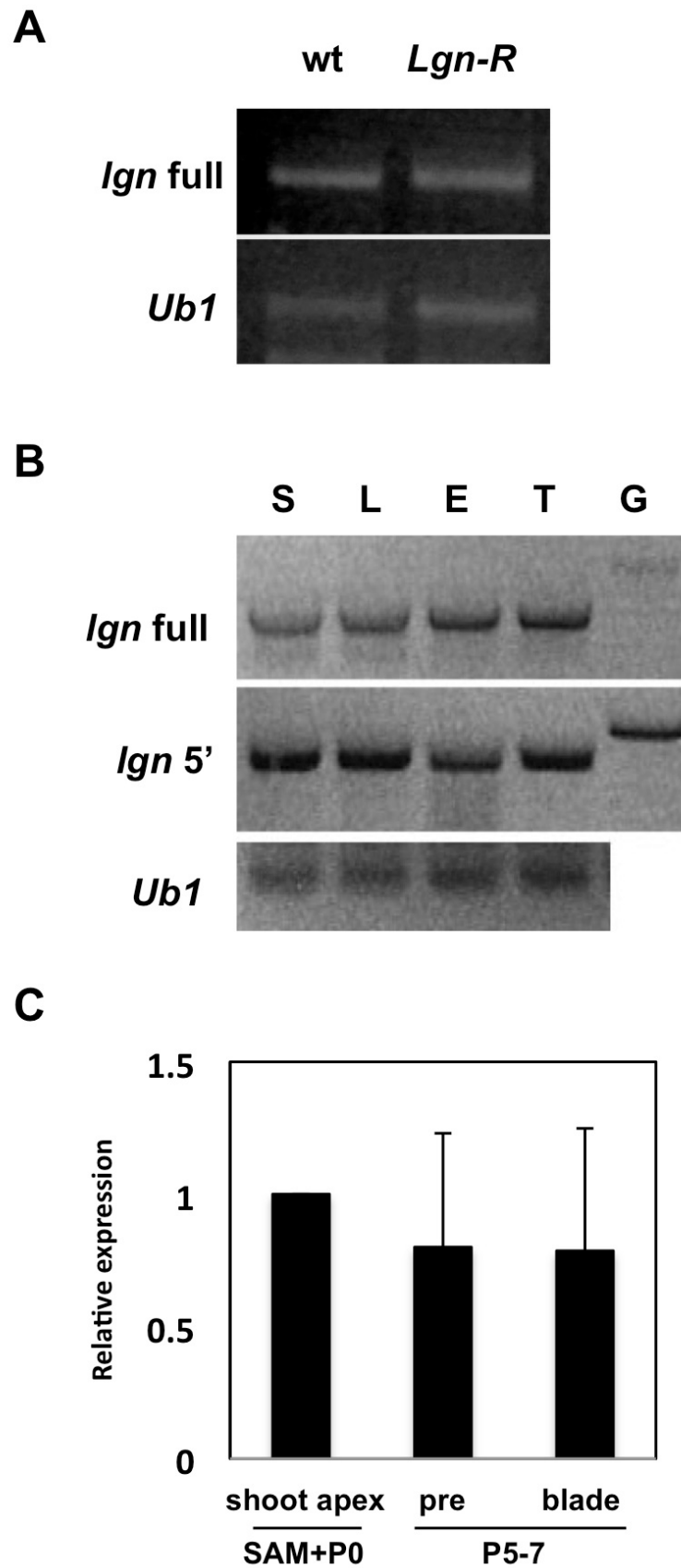


Fig. S3. *lgn* is broadly expressed during development. (A) *lgn* expression remains unchanged in *Lgn-R*. (B) *lgn* is expressed in various tissues. S, SAM; L, immature leaves; E, immature ears; T, immature tassels; G, genomic DNA. (C) *lgn* is expressed in different leaf domains.