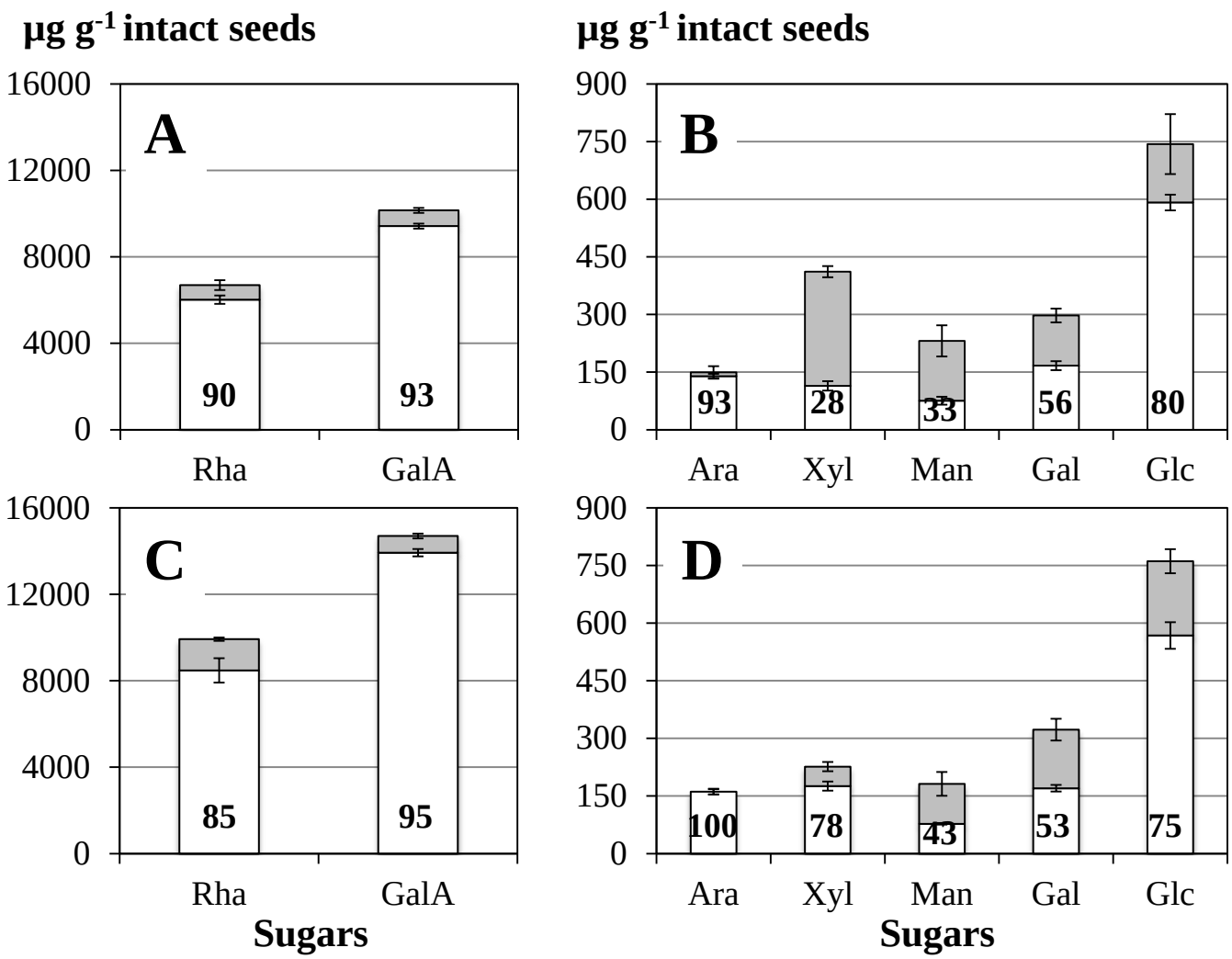
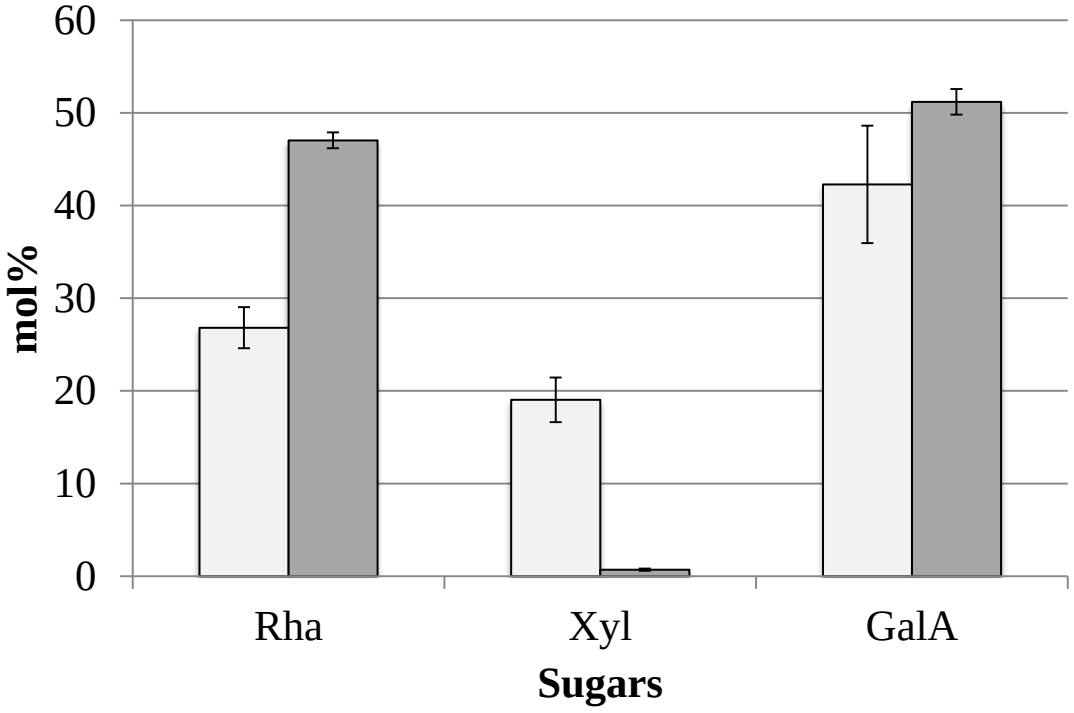
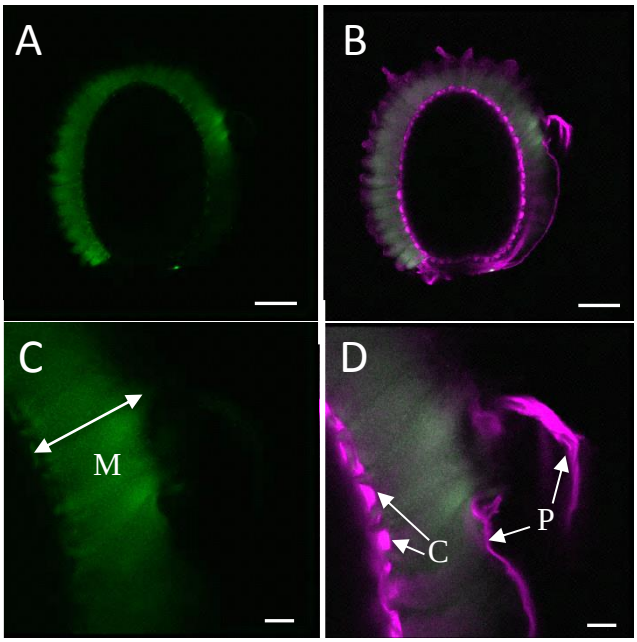


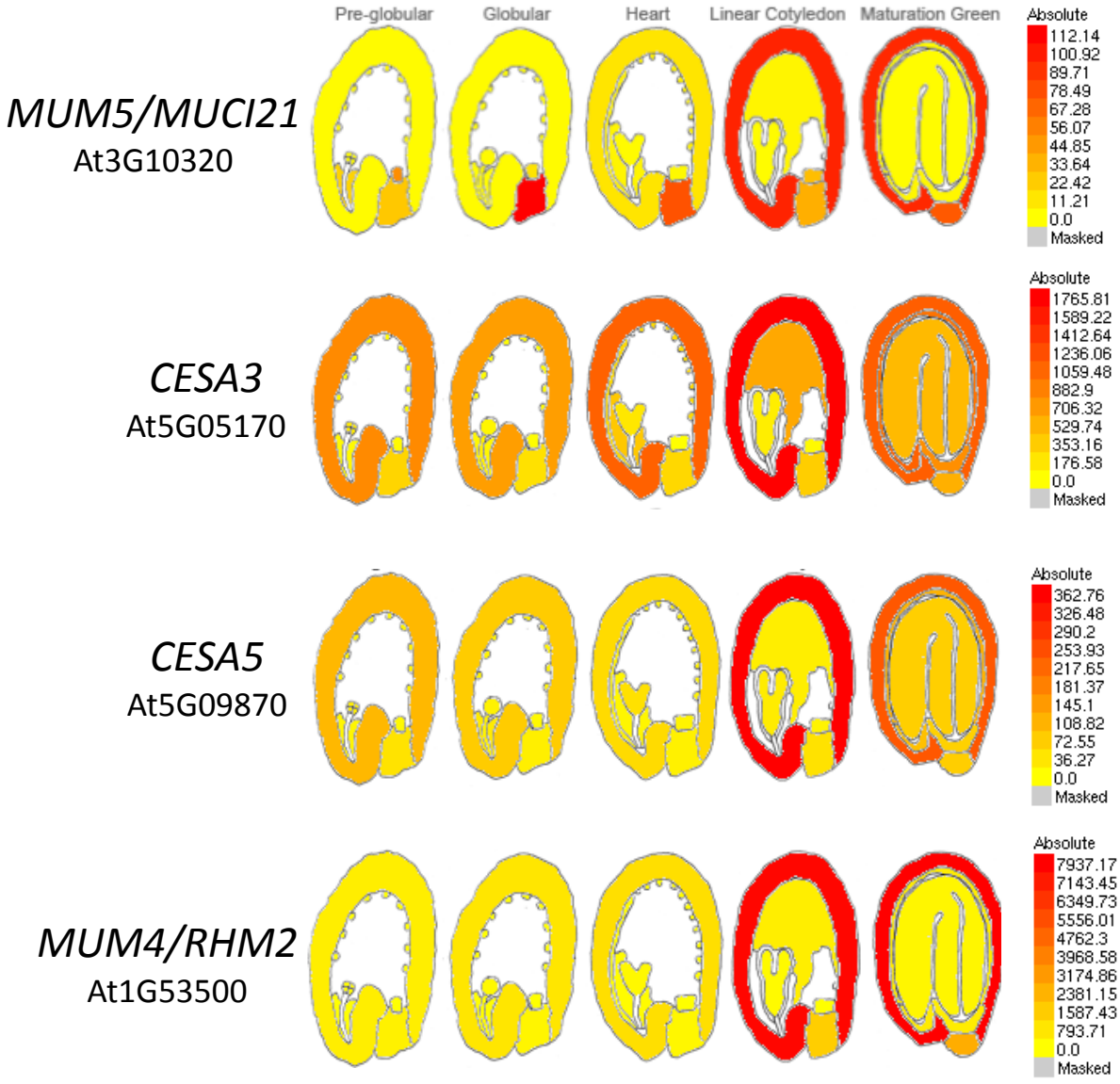
Supplemental Fig. S1. Sugar distribution between the ethanol-soluble fraction and ethanol precipitate from wild-type and *mum5-1* water-extracted mucilage after a complete digestion with rhamnogalacturonan hydrolase. Amounts of sugars are shown for ethanol-soluble fraction (white bars) and the ethanol precipitate (grey bars), the latter being calculated from values measured for total and ethanol-soluble fraction. Water-extracted mucilage was totally degraded with rhamnogalacturonan hydrolase (16 h) and then precipitated with ethanol. Values for total sugars are from Supplemental Table 1. Sugars were found in similar proportions in both wild-type (A and B). and *mum5-1* (C and D) mucilage, except for Xyl, which was mainly recovered in the ethanol precipitate from wild type and in the ethanol-soluble fraction for *mum5-1*. Values are µg g^{-1} of intact dry seeds and means (±SD) were calculated from three technical replicates.



Supplemental Fig. S2. Sugar distribution between the ethanol-soluble fraction and ethanol precipitate from wild-type water-extracted mucilage after a short digestion with rhamnogalacturonan hydrolase. Water-extracted mucilage from wild-type Col-0 was partially degraded with rhamnogalacturonan hydrolase (3 h) and then precipitated with ethanol. The ethanol precipitate (light grey bars) was enriched in Xyl. The ethanol soluble fraction (dark grey bars) contained > 98 mol% of Rha and GalA in a molar ratio close to 1. Results are given as average mole percentage. Values are means of three independently extracted samples with error bars indicating the mean SD.



Supplemental Fig. S3. AX1 labelling of xylan epitopes is limited to mucilage and is not observed in the primary cell wall. Adherent mucilage released from mature imbibed *pmei6-1* seeds was labelled with AX1 antibody (green) and cellulose stained with Pontamine Fast Scarlet 4B (magenta). A and B, show whole seeds and C and D, higher magnifications of mucilage from the same seeds, respectively. Confocal microscopy optical sections show AX1 antibody labelling alone (A and C) or composite images of double labelling with Pontamine (B and D). C, columella; M, adherent mucilage; P, primary cell wall fragments. Bars = 100µm (A and B) and 20µm (C and D).



Supplemental Fig. S4. *MUM5/MUCI21* is preferentially expressed in the seed coat during seed development. The expression profile of *MUM5/MUCI21* in developing seed tissues compared to that of *CESA3*, *CESA5* and *MUM2/RHM2* using the eFP Browser presentation of ATH1 microarray data (Winter et al., 2007; Belmonte et al., 2013).

SUPPLEMENTAL REFERENCES

Belmonte MF, Kirkbride RC, Stone SL, Pelletier JM, Bui AQ, Yeung EC, Hashimoto M, Fei J, Harada CM, Munoz MD, et al (2013) Comprehensive developmental profiles of gene activity in regions and subregions of the Arabidopsis seed. Proc Natl Acad Sci USA 110: E435–E444

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