

Table 1 Suppl. Forward and reverse primer sequences used for genetic analysis of *bgal* mutants.

Target	Primer sequence 5'-3'	
<i>AtBGAL1</i>	TGGGTCCAGTTTCATTGAACG	CTTCTGACCAACGTGATTCCG
<i>AtBGAL2</i>	TGGTCAAGAAGCAACCCTTGA	ATTCCACTTGGATCACCACCC
<i>AtBGAL3</i>	TCTTTTCTTCCACTTTGAGTTTCCA	AATCTCTACCAGCCGCTCCAT
<i>AtBGAL4</i>	AGTCCTGCATTTTCTGGCAA	CCCAAAATTCCATTACGCACA
<i>AtBGAL5</i>	GTTGGACAGGTTGCTGCAAAG	AACTAACCGGCAACCCAACTG
<i>AtBGAL12</i>	TTCTTCTTCTCACATGTTTCCG	TGAATTCACCGGCTGTTCTGT
SAIL T-DNA	GCCTTTTCAGAAATGGATAAATAGCCTTGCTTCC	
Salk T-DNA	TTGGGTGATGGTTCACGTAGTGGGCCATCG	

Table 2 Suppl. Forward and reverse primer sequences used for reverse transcription semiquantitative PCR.

Target	Primer sequence 5'-3'	
<i>AtBGAL1</i>	GATGTTAAAGTTGATGCCAATG	GACCAACAGCAATGCCCTAGT
<i>AtBGAL2</i>	TTGAAGACTGGTGATAATCCTC	TCATAATGCACACCAGCGTT
<i>AtBGAL3</i>	GTTGATATCGGTGACAGTGAAT	CCAACAGCAACACTCAGCAA
<i>AtBGAL4</i>	GAAGACTGGTGATTCACCTCT	GACCCACTGCAACACTCAGA
<i>AtBGAL5</i>	GGCATCAGAATCATTCTTGCG	GCTCCACCTCGTAGATTGAC
<i>AtBGAL12</i>	GCTCCTCTTGATGAATACGGG	TCAGTTTTGCAGTCGGGTAGAA
<i>AtACT2</i>	CACCCTGTTCTTCTTACCGA	TTGGCACAGTGTGAGACACAC

Table 3 Suppl. Fresh mass of whole cell wall and of cell wall proteins extracted with 1 M NaCl from 10-d-old *bgal* and WT(*bgal*) seedlings. Means $\pm$ SEs, $n = 3$.

Seedlings	Cell wall [mg g ⁻¹ (cell f.m.)]	Proteins [μ g g ⁻¹ (cell f.m.)]	Proteins/cell wall
<i>bgal1</i>	21.95 $\pm$ 3.69	18.53 $\pm$ 2.4	0.87 $\pm$ 0.23
WT(<i>bgal1</i>)	21.40 $\pm$ 2.28	18.11 $\pm$ 2.57	0.85 $\pm$ 0.11
<i>bgal2</i>	16.76 $\pm$ 3.4	8.45 $\pm$ 3.7	0.48 $\pm$ 0.1
WT(<i>bgal2</i>)	18.88 $\pm$ 3.8	7.76 $\pm$ 1.6	0.42 $\pm$ 0.1
<i>bgal3</i>	33.93 $\pm$ 3.4	23.08 $\pm$ 6.77	0.67 $\pm$ 0.15
WT(<i>bgal3</i>)	29.86 $\pm$ 3.5	18.65 $\pm$ 4.51	0.60 $\pm$ 0.1
<i>bgal4</i>	24.03 $\pm$ 1.4	18.29 $\pm$ 4.7	0.76 $\pm$ 0.1
WT(<i>bgal4</i>)	23.92 $\pm$ 1.2	17.31 $\pm$ 3.2	0.71 $\pm$ 0.1
<i>bgal5</i>	35.50 $\pm$ 2.5	23.27 $\pm$ 0.89	0.65 $\pm$ 0.03
WT(<i>bgal5</i>)	36.90 $\pm$ 4.2	22.48 $\pm$ 0.32	0.61 $\pm$ 0.01
<i>bgal12</i>	20.42 $\pm$ 5.7	40.01 $\pm$ 18.8	1.70 $\pm$ 0.98
WT(<i>bgal12</i>)	19.59 $\pm$ 4.8	32.19 $\pm$ 16.0	1.16 $\pm$ 0.69

Table 4 Suppl. Total variance of FTIR spectra from cell walls of green and etiolated *bgal* and WT(*bgal*) 3-d-old seedlings explained by principal components (PC) PC1 and PC2.

	PC	Variance [%]	Cumulative % of variance
<i>gal1</i>	1	82.68	82.68
WT(<i>gal1</i>)	2	13.51	96.19
<i>gal2</i>	1	95.50	95.50
WT(<i>gal2</i>)	2	4.24	99.75
<i>gal3</i>	1	84.41	84.41
WT(<i>gal3</i>)	2	11.89	96.30
<i>gal4</i>	1	96.72	96.72
WT(<i>gal4</i>)	2	2.46	99.19
<i>gal5</i>	1	88.15	88.15
WT(<i>gal5</i>)	2	9.23	97.38
<i>gal12</i>	1	99.15	99.15
WT(<i>gal12</i>)	2	0.67	99.82

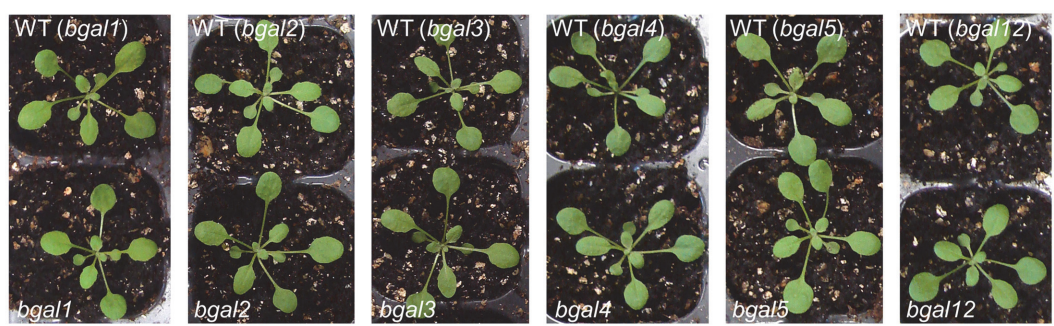


Fig. 1 Suppl. Photographs of 17-d-old *bgal* and WT(*bgal*) plants grown in plastic pots at a temperature of 22 °C, 16-h photoperiod, and irradiance of 80 - 100 $\mu\text{mol m}^{-2} \text{s}^{-1}$.

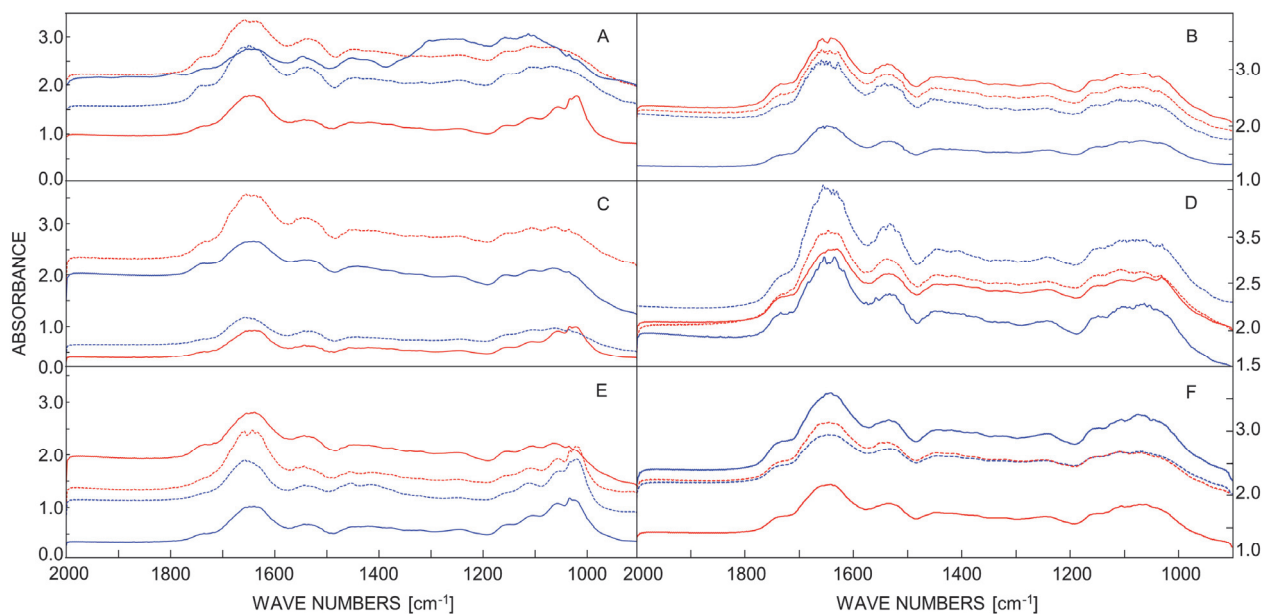


Fig. 2 Suppl. Fourier transform infrared spectroscopy (FTIR) spectra of cell walls from green and etiolated 3-d-old *bgal* and WT(*bgal*) seedlings. A - *bgal1* and WT(*bgal1*), B - *bgal2* and WT(*bgal2*), C - *bgal3* and WT(*bgal3*), D - *bgal4* and WT(*bgal4*), E - *bgal5* and WT(*bgal5*), and F - *bgal12* and WT(*bgal12*). Red full line - *bgal* green seedlings, red dotted line - *bgal* etiolated seedlings, blue full line - WT(*bgal*) green seedlings, and blue dotted line - WT(*bgal*) etiolated seedlings.

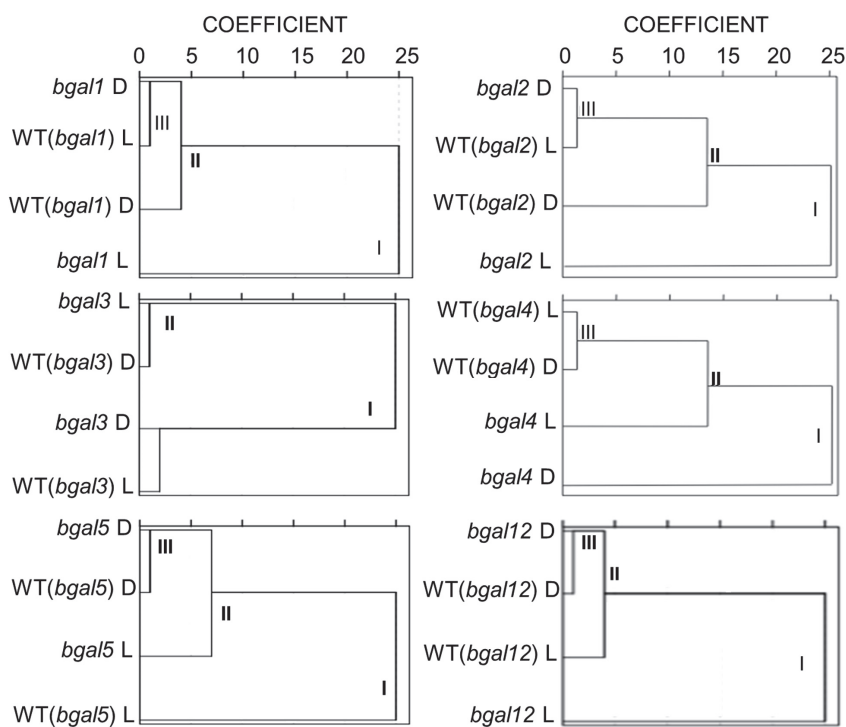


Fig. 3 Suppl. Dendrograms generated after cluster analysis of FTIR spectra from cell walls of 3-d-old *bgal* and their corresponding WT(*bgal*) seedlings grown under a 16-h photoperiod with an irradiance of 80 - 100 $\mu\text{mol m}^{-2} \text{s}^{-1}$ (L) or in the darkness (D).

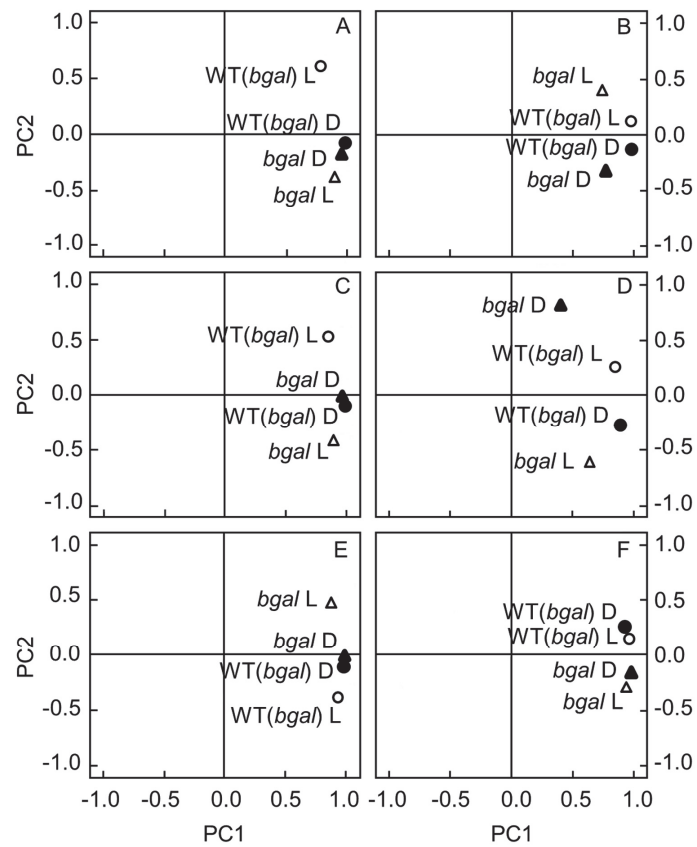


Fig. 4 Suppl. Principal component analysis of FTIR spectra from cell walls of 3-d-old *bgal1* (A), *bgal2* (B), *bgal3* (C), *bgal4* (D), *bgal5* (E), *bgal12* (F) and their corresponding WT(*bgal*) seedlings grown under a 16-h photoperiod with an irradiance of 80 - 100 $\mu\text{mol m}^{-2} \text{s}^{-1}$ (L) or in the darkness (D).

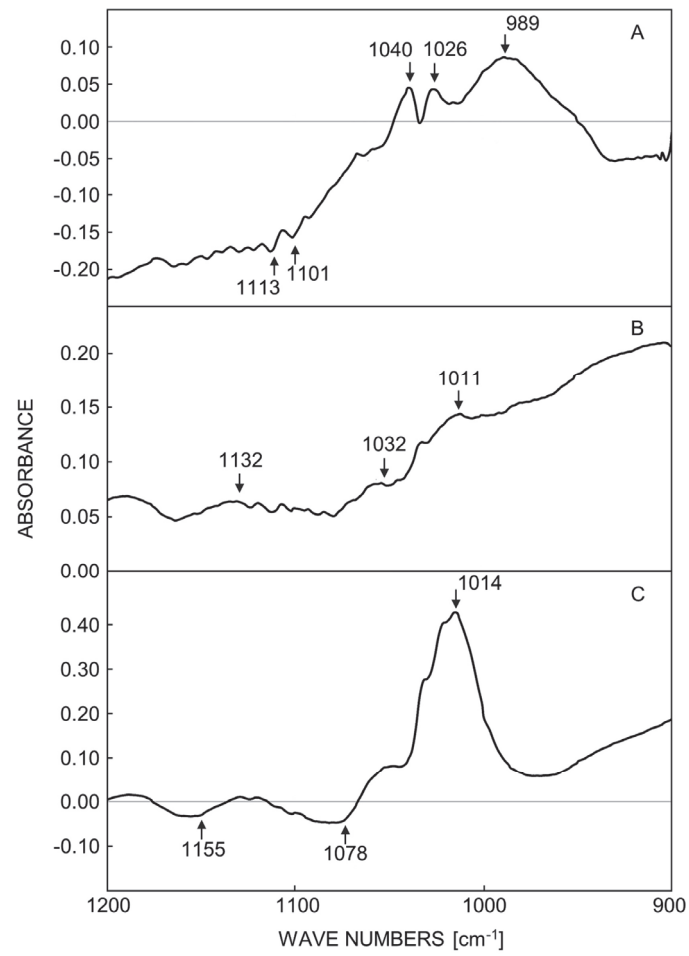


Fig. 5 Suppl. Principal component 2 (PC2) loading plot of 900 - 1200 cm⁻¹ region of FTIR spectra from cell walls of green 3-d-old *bgal* seedlings and their corresponding WT. *A* - *bgal1* and WT(*bgal1*), *B* - *bgal3* and WT(*bgal3*), and *C* - *bgal5* and WT(*bgal5*).