

Supplementary data

Changes in Homogalacturonan Metabolism in Banana Peel during Fruit Development and Ripening

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Table S1-2

Figure S1-2

Table S1. Primer sequences used in the present study.

Gene	Forward primer (5'-3')	Reverse primer (5'-3')
Actin	TGGTATGGAAGCCGCTGGTA	TCTGCTGGAATGTGCTGAGG
Ma09_g15970	ACTCTGTTCCCTGCACCAAC	GAGGTAAGCCCTCCGACAAG
Ma07_g28300	TCCTGAAGGGTGAATGACTG	GCCATCAATGTATCCCCTGTC
Ma11_g23340	TTATTGACTTGGAGAAGTGGAG	GTAATGCAATGATGTAGCAGTC
Ma08_g12630	ACGGATGAAAGTGAGTGGAAG	CGCATCAGAAGTGATGGAG
Ma09_g12060	ACGCAATCGAGTTCAACATAAC	AGAGGCACTTGTTGTGGAAG
Ma03_g00210	TGCAAGCTTGTGGAAGAATTG	TCAGAAGTCAATGTGCCAACC
Ma04_g02960	CCAGTTCACCTGGCGTGTAGC	AAGCAGGTGATGGGAGGAATG
Ma07_g15530	CCTTGGACACACTGTACTACGC	GGTCAACCCAGCTGTGTACTTC
Ma03_g05670	GCAACGTGATAGTGAAGACC	TCCCCATAATACAACGTGTC
Ma02_g21670	AACTCTACTCCAGGGTGGTG	GAGGAGCCGTAGATGAACTG
Ma11_g02770	GAGGTCTGAAGAAGCCGATATG	CCCAACACAATCCACAGGTAG
Ma02_g16140	CCAGTTCTACTGCGACCAGAG	TAGCTAGCTCCACGTTGCTTC
Ma05_g20750	TGAGAGGCAGGACACATGG	GACGATGTGATGGCAGGTG
Ma06_g30000	GCGAGTGGAAGAAGTGGAAC	CCCTTCTTGACGAGAGAAAC
Ma11_g19010	GATCGAGCACCGATGGAATC	AGAGGTTGTCGAGCGGACAC
Ma07_g18890	GGGTGCTCTGGAAACTTGG	CCCGGACATAAGGATGGTC
Ma08_g21130	ACGGCATCACCATCAAGAAC	CGGTGGAGCAGTATCCTGAG
Ma01_g07260	TTTTGGAGGACACAGGGTTC	TGCACTTGTACTGCCCCGTAG
Ma04_g33470	ACCAGACGGCGTTCTTTGG	AAGGATCGGAAGGGCCAAG
Ma04_g28370	GAAGAAAACAACCTCCAAGATGG	TGTGGGATATTCTAGTCCTTGC
Ma04_g23990	GACATCCAGACGTGGGTGAG	GCAGAGTTGAGCACGTTGATG
Ma04_g20800	ACCTCAGCAACGTCCAGACC	CCGAGTTGATTCACGAGAGC
Ma04_g31200	GACATGCAGACGTGGGTGAG	ATGACAAGGCGTTGCTCGTC

Ma03_g13710	AAGGGTGGACACAGATCAAAG	TCAGTGTGTCAACCAAGGAAG
Ma06_g24560	AGCTTCTGGTGCTCAACCTC	GCAGAGGCACTTGTTATGGAG

Table S2. Antibody used in the present study and the antigens.

Antibody	Antigen	Reference
2F4	Un-esterified/Calcium ion cross-linked HG	[1]
CCRC-M34	Partially methyl-esterified HG [base-sensitive homogalacturonan epitope]	[2]
CCRC-M38	Fully de-esterified HG [de-esterified homogalacturonan (DP>5)]	[2]
CCRC-M130	Methyl-esterified on HG	[2]
JIM5	Partially methy-esterified HG epitope: unesterified and partially esterified residues (up to 40%) [Me(alpha)GalA1->4(alpha)GalA1->4(alpha)GalA1->4 (alpha)GalA1->4(alpha)GalA1->4(alpha)MeGalA]	[3]
JIM7	Partially methy-esterified HG epitope: methyl-esterified residues (up to 80%) [GalA1->4MeGalA1->4MeGalA1->4MeGalA1->4MeG alA1->4GalA]	[3,4]
LM7	Partially Me-HG / non-blockwise	[3]
LM18	Lowly methyl-esterified HG / a trigalacturonide	[5]
LM19	De-esterified HG not recognizing oligogalacturonides of DP<4	[5]
LM20	Highly methyl-esterified HG alpha-MeGalA(1-4)alpha-MeGalA(1-4)alpha-MeGalA (1-4)alpha-MeGalA	[5]
PME	Pectin methyl esterase in <i>Musa acuminata</i>	Generated by Abmart (Shanghai, China).

DP: degree of polymerization; HG: homogalacturonan; PME: pectin methyl esterase

References

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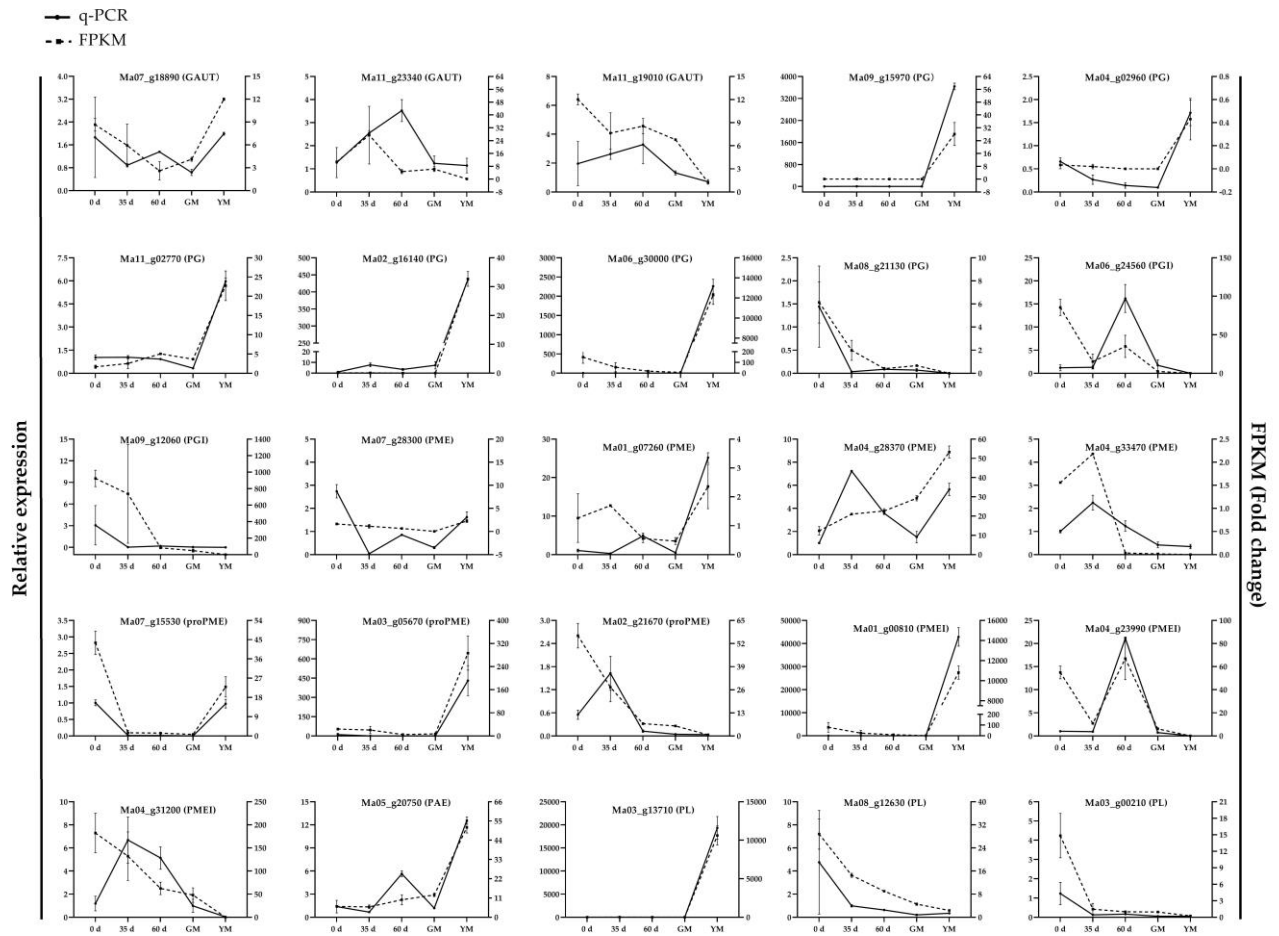


Figure S1. qPCR analysis of the expression of 25 representative differentially expressed homogalacturonan-modifying genes in banana (*Musa* spp. AAA) peel during fruit development and ripening.

0 d: fruits just emerging from the bunch; 35 d: 35 day-old fruits; 60 d: 60 day-old fruits; GM: green matured fruits (at harvest, 85 d); YM: yellow matured fruits (6 d after ethylene treatment).

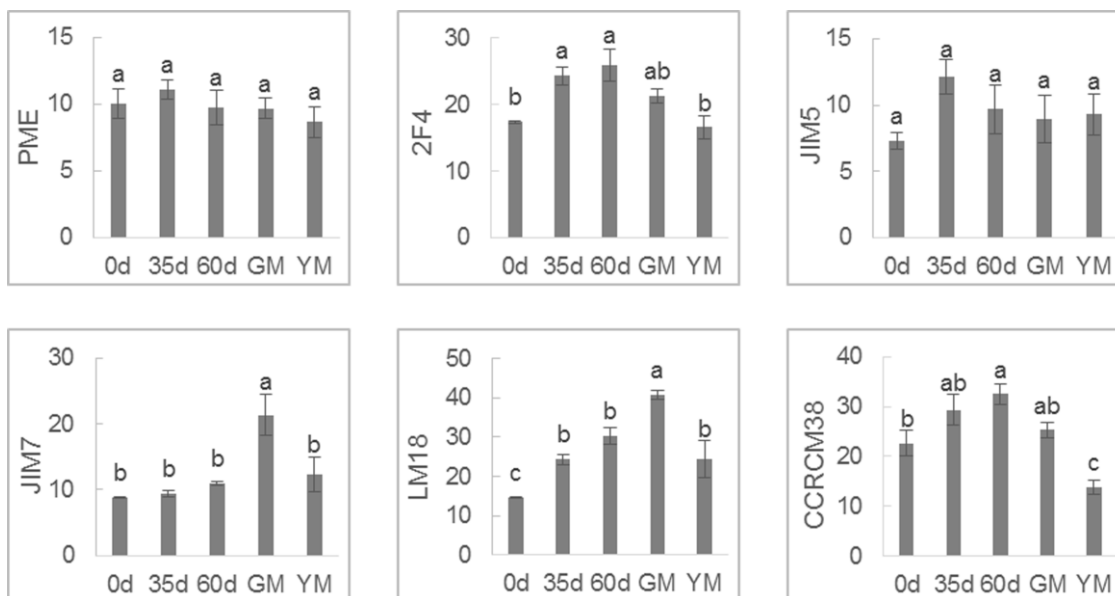


Figure S2. The quantification of fluorescence intensity of antibodies recognizing PME and different homogalacturonan components in banana (*Musa* spp. AAA) peel during fruit development and ripening.

0 d: fruits just emerging from the bunch; 35 d: 35 day-old fruits; 60 d: 60 day-old fruits; GM: green matured fruits (at harvest, 85 d); YM: yellow matured fruits (6 d after ethylene treatment).