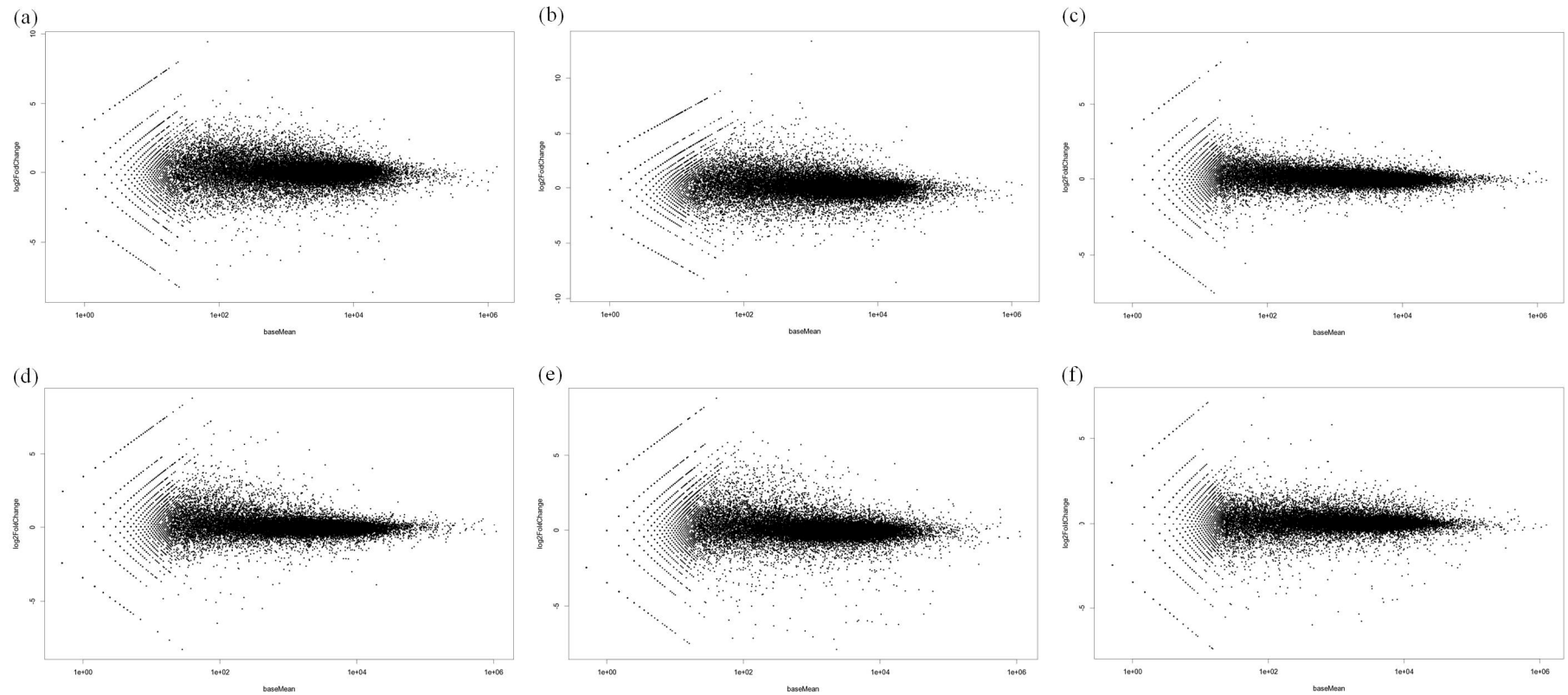
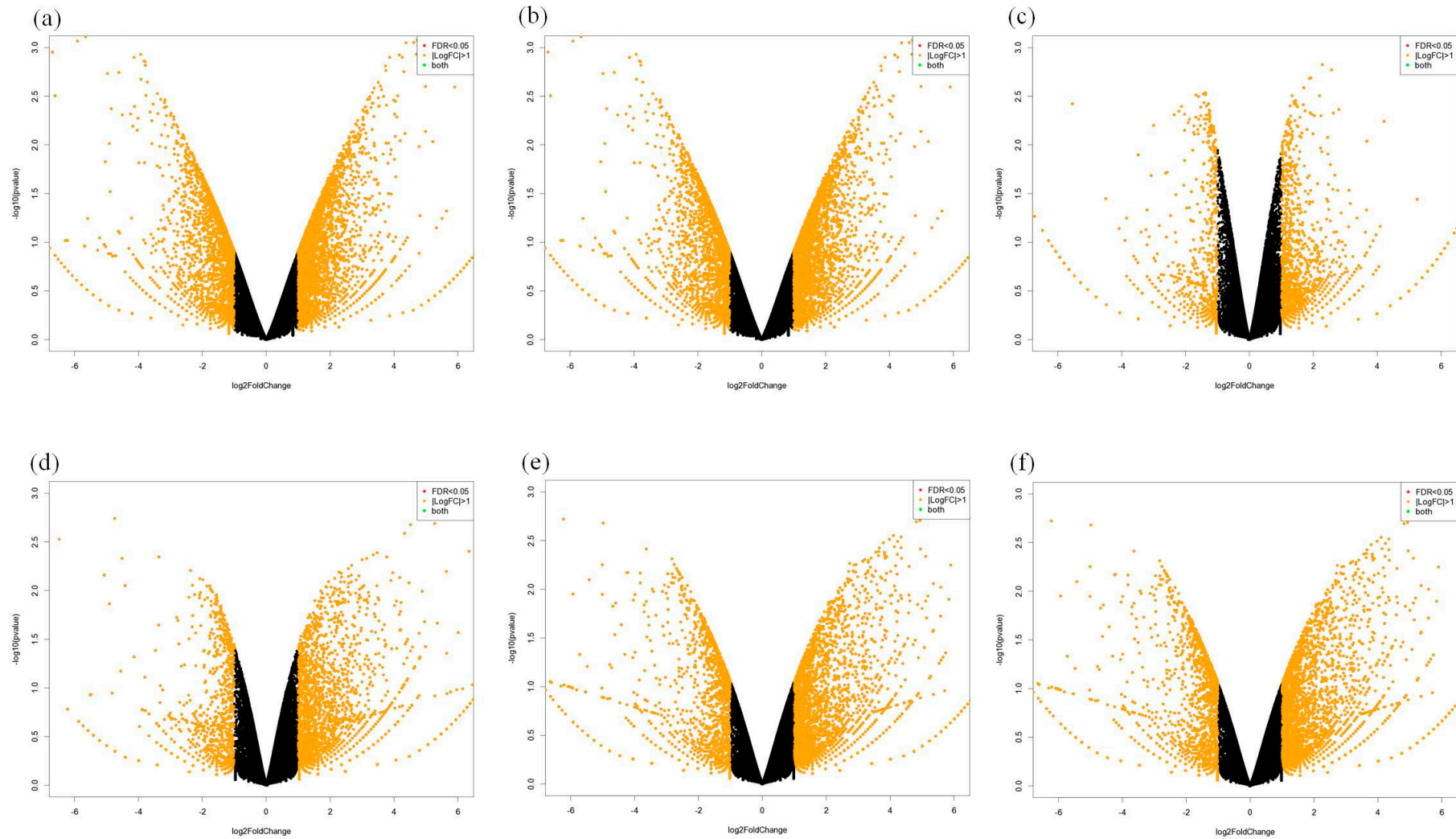


Supplementary Table S1. Primer of qRT-PCR in *Clivus* and I-476.

<i>Populus alba</i> Gene ID	<i>Populus alba</i> description	Forward primer	Reverse primer
D5086_0000064330	glycosyl hydrolase 9C3	5'-GACCTTGCTGGAGAACTGC-3'	5'-TGAAAAGCTGTTTTGCATGG-3'
D5086_0000042670	glycosyl hydrolase 9B13	5'-CTTGGAGCTGCACAATTTGA-3'	5'-GGAGGGATTGCACTTTTTGA-3'
D5086_0000212360	glycosyl hydrolase 9C3	5'-AACTGGGTGGGCTATGACTG-3'	5'-CAGCCTTCTGCTGGTACTCC-3'
D5086_0000289410	Glycogen/starch synthases, ADP-glucose type	5'-ACTGCGGTTCAAGCTTGTCT-3'	5'-AACATGGGAGGAGACCAGTG-3'
D5086_0000250770	glycosyl hydrolase 9B18	5'-TTGGCGTGGAGTGTTAATGA-3'	5'-CAAAAATCCGGTTAGGCTGA-3'
D5086_0000252880	Glycosyl hydrolases family 31 protein	5'-AGACTGGTGGGGTGATGAAG-3'	5'-ACCAGGTCCAGTTCCACTTG-3'
D5086_0000305900	Glycosyl hydrolase superfamily protein	5'-GGAATGGGTCAATGAAATGG-3'	5'-TGCCAGGATTTGATTCTTC-3'
D5086_0000281500	plant glycogenin-like starch initiation protein 1	5'-CGGGTTCTGTTGAAGCTAGG-3'	5'-GGGGATGTTGAAGGGTTTTT-3'
D5086_0000277080	plant glycogenin-like starch initiation protein 3	5'-GAATGGATTGACGAGGAGGA-3'	5'-AGTTTGGCCACCACCAAGTC-3'
D5086_0000328260	Glycosyl hydrolase superfamily protein	5'-GTCATGTCAAGGCGGTATT-3'	5'-AGGTGCATCGAGGTTTCATTC-3'
D5086_0000265220	DREB2A-interacting protein 2/E3 ubiquitin protein ligase DRIP2-like	5'-ACCAGCATTAAGGAGCATGG-3'	5'-TGGTTTGACGCCTTCTAGGT-3'
D5086_0000080910	ABI-1-like 1/probable protein ABIL5	5'-ATCTTGGATGCGTCTCTGCT-3'	5'-TGTGAGAGCAACCCTGTGAG-3'
D5086_0000065160	fatty acid desaturase 2/delta(12)-acyl-lipid-desaturase-like	5'-AGGCATTCTTGCTGCAACTT-3'	5'-TGATGGTGACAAGGAAACCA-3'
D5086_0000242970	myb domain protein 9/transcription factor MYB53-like	5'-TCCTCAGCAACCATTCACTG-3'	5'-GGGGCAGTGTGTTTGAAGTT-3'
D5086_0000065170	fatty acid desaturase 2/delta(12)-acyl-lipid-desaturase-like	5'-GGCTACGAAAGCAATCAAGC-3'	5'-TTTCAGGAGCTCCGTCATCT-3'
D5086_0000176630	HSP20-like chaperones superfamily protein/23.6 kDa heat shock protein, mitochondrial-like	5'-TGGCAAGGAGGATGTTAAGG-3'	5'-TTTTCTCGGGCAAATCAATC-3'
D5086_0000043470	galactinol synthase 1/galactinol synthase 2-like	5'-TGGTCATTTCTATGCGGTGA-3'	5'-TCAGCAGGCCAGTTAACCTT-3'
D5086_0000080180	Ribulose biphosphate carboxylase (small chain) family/ribulose biphosphate carboxylase small chain clone 512-like protein	5'-CGCAAGTCCTCGAAGAAATC-3'	5'-TGCCAGGTTTTTGAATGACA-3'
D5086_0000038460	glucuronoxylan 4-O-methyltransferase-like protein (DUF579)	5'-ACCGATGTTTTTGTGCATGA-3'	5'-CCCTGTGGCTAGGAATGGTA-3'
D5086_0000215870	HSP20-like chaperones superfamily protein/22.0 kDa class IV heat shock protein-like	5'-TCTCCTGCCATTTTCAGACC-3'	5'-CTGGAGAGAGTGCCACATGA-3'
GeneBank Accession XM_002298674	ACTIN1	5'-TATCTCCTCTGTCTCCGACT -3'	5'-GCATCATCACCTGCAAAC -3'



Supplementary Figure S1. MA plot of DEGs. Each dot represents a single gene. X axis represents value A(basemean). Y axis represents value M(log2 transformed fold change). (a) Clivus OTC1 vs. Clivus OTC2; (b) Clivus OTC1 vs. Clivus OTC3; (c) Clivus OTC2 vs. Clivus OTC3; (d) I-476 OTC1 vs. I-476 OTC2; (e) I-476 OTC1 vs. I-476 OTC3; (f) I-476 OTC2 vs. I-476 OTC3.



Supplementary Figure S2. Volcano plot of DEGs. The volcano map displays expression changes of all genes. X axis represents $-\log_{10}$ transformed significance. Y axis represents $\log_2$ transformed fold change. Yellow dots highlight log fold changes of -1 and 1 . (a) Clivus OTC1 vs. Clivus OTC2; (b)

Clivus OTC1 vs. Clivus OTC3; (c) Clivus OTC2 vs. Clivus OTC3; (d) I-476 OTC1 vs. I-476 OTC2; (e) I-476 OTC1 vs. I-476 OTC3; (f) I-476 OTC2 vs. I-476 OTC3.