

**Ethylene Responsive Transcription Factors Interact with Promoters of *ADH* and *PDC* involved in Persimmon (*Diospyros kaki*) Fruit Deastringency**

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### Supplementary Table S1

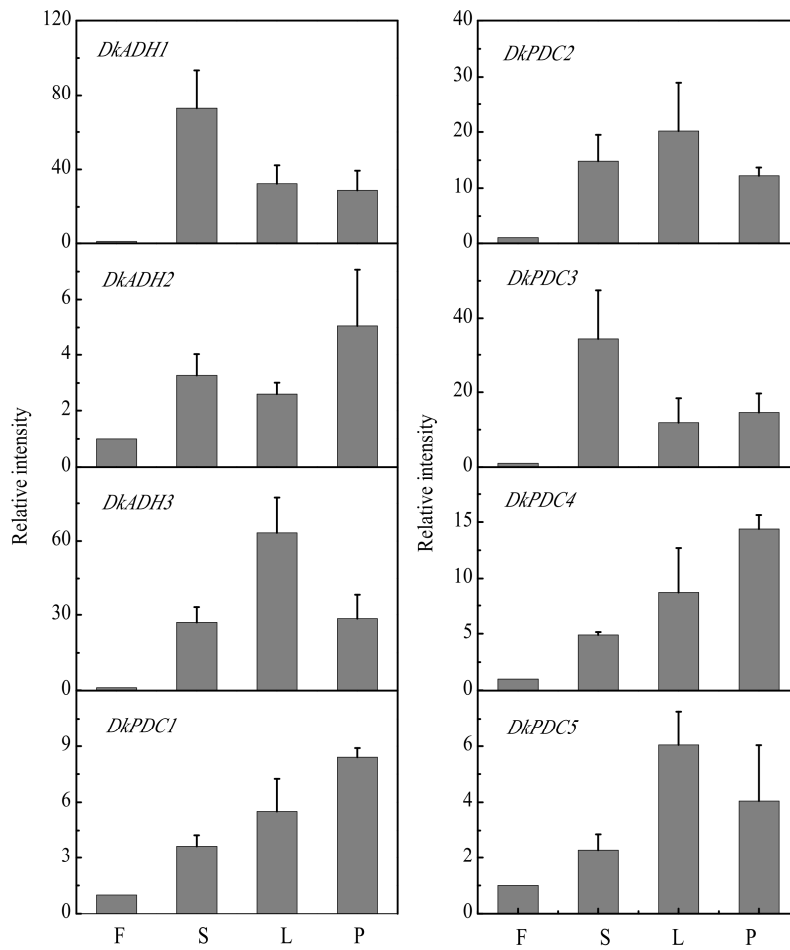
Sequences of the primers used for gene isolation and expression analysis

|                        | Gene           | Primary PCR (5' to 3')           | Secondary PCR (5' to 3')         |
|------------------------|----------------|----------------------------------|----------------------------------|
| Degenerate clone       | <i>DkADH1</i>  | TGGGADGCYAAGGGMCARA              | CCCCANCCATCRTGRACACA             |
|                        | <i>DkADH3</i>  |                                  |                                  |
| 3'RACE                 | <i>DkADH1</i>  | TTGGAGAGGGAGTGACGGAT<br>CTTGC    | AGGGGTCATGCTCCATGATGCCA<br>AATCA |
|                        | <i>DkADH2</i>  | GATCATGTCATACCTTGTAT<br>CAGGCA   | TCAGGCAGAATGCAGGGAGTGTA<br>AATT  |
|                        | <i>DkADH3</i>  | CCTTGAGATGTGCAGACTTCG<br>TTGTTA  | TAGTGCCATGGTTCTCTTGCCAAT<br>CA   |
|                        | <i>DkPDC1</i>  | GAGTCCCATTCTCTTGCAC<br>CATTG     | GATCAAGAAAGAGAAAGCAGTG<br>ATC    |
|                        | <i>DkPDC2</i>  | TCCGAAGTTGACTAATGAGAT<br>GGGTTT  | TAGAGTTAGCCGACGCCAGTGGT<br>TT    |
|                        | <i>DkPDC3</i>  | CTTCCAGTCCGTAAGAATGG<br>CGGATG   | AAGCGCTTAGCAAGCCGGACAAT<br>TC    |
|                        | <i>DkPDC5</i>  | TAAGATCGGAGCCGTGGAAG<br>TGAGTCC  | TGCGTTTCCACCATCCAGAACTCT<br>TGC  |
|                        | <i>DkERF9</i>  | CAAGAAGAAGAGCGACG<br>AGAAGCAG    | GTACAGAGGGGTCAGGCAGA<br>GGACT    |
|                        | <i>DkERF10</i> | AAAGAGCATCAGGACATCAC<br>ACACAAG  | CAATCCCCTTCAGGCAATTTCTTT<br>TTA  |
|                        | Real-time PCR  | <i>DkADH1</i>                    | GAGAAGTTCATCACGCACGA             |
| <i>DkADH2</i>          |                | TGGCTCTTGACAGATCAAC              | GTGACGAGGAGGTTCCACCAT            |
| <i>DkADH3</i>          |                | CAGAACATCTGGGCACTGAA             | GCCAGCCAAAGAAAAAGAAA             |
| <i>DkPDC1</i>          |                | CCCATAACAGTTCGAGAAA              | CTGCACCATCAACTGCAAAT             |
| <i>DkPDC2</i>          |                | GCCCACCAAATCCTCAGTAA             | CCAGAAAAGATGGGCACAAA             |
| <i>DkPDC3</i>          |                | CTTAGCAAGCCGACAATTC*             | GGACTGCTCGTTATGGAAGG*            |
| <i>DkPDC4</i>          |                | GCCAGCTGTGATAAACGTCA*            | GGCAGCAAACAAATTCACAA*            |
| <i>DkPDC5</i>          |                | CCTCCGTCACACAAATTTCA*            | CCACGGCTCCGATCTTAGTA*            |
| <i>DkERF9</i>          |                | AGTGGATGATGTTGGAAGAA<br>GAG      | ACTCGACCTACCTATTATGGAGA<br>AC    |
| <i>DkERF10</i>         |                | CATCTCCTAGAATCAGCATTC<br>C       | GACAATGGAGGATGCCAAT              |
| 5'RACE                 | <i>DkADH1</i>  | ACGCAAACCAACTGCGTAT              | ACCAACTTGAGCCACCACTC             |
|                        | <i>DkPDC2</i>  | GGGGATCATAGCCCAACAAT             | CCAGAAAAGATGGGCACAAA             |
|                        | <i>DkERF10</i> | GTGTGTGATGTCCTGATGCTC<br>TTTGG   | CGCTCACCACCTGAAGGGGATTG<br>AGG   |
| Full-length            | <i>DkADH1</i>  | ACGCAAACCAACTGCGTAT              | ACCAACTTGAGCCACCACTC             |
|                        | <i>DkADH2</i>  | CGGTCTCTCTTCCGTCCT               | GACGAGGAGGTTCCACCATGT            |
|                        | <i>DkPDC2</i>  | GGGGATCATAGCCCAACAAT             | CCAGAAAAGATGGGCACAAA             |
|                        | <i>DkERF9</i>  | TGTTTTCTGTGTATATGGTTG            | TATCCAGAAAACCTCCATATCAT          |
|                        | <i>DkERF10</i> | AGAAGAAGCAAGTATGTGTG<br>GC       | TTCTAGGAGATGGCAGGACGGA           |
| Genome walking         | <i>DkADH1</i>  | TTTACAAACAATCACTTGACC<br>AGCGGTG | CATGCCACGGCAGCTTTACAAAC<br>AATCA |
|                        | <i>DkPDC2</i>  | CTTCCACTGCTCCGATCTTAGT<br>ATCCAT | CGTCGCTGCTGGGACCTGGACTC<br>ACTTC |
| Promoter amplification | <i>DkADH1</i>  | ACAAGAAATTAAGTTTAGTG             | GCCATCTCTGTGGGCTTAAT             |
|                        | <i>DkPDC2</i>  | ATAATCAAGCTTCAGTGTTT             | TCTTAGTATCCATGGTAATT             |

\* These primers were designed according to the sequences of the coding regions.

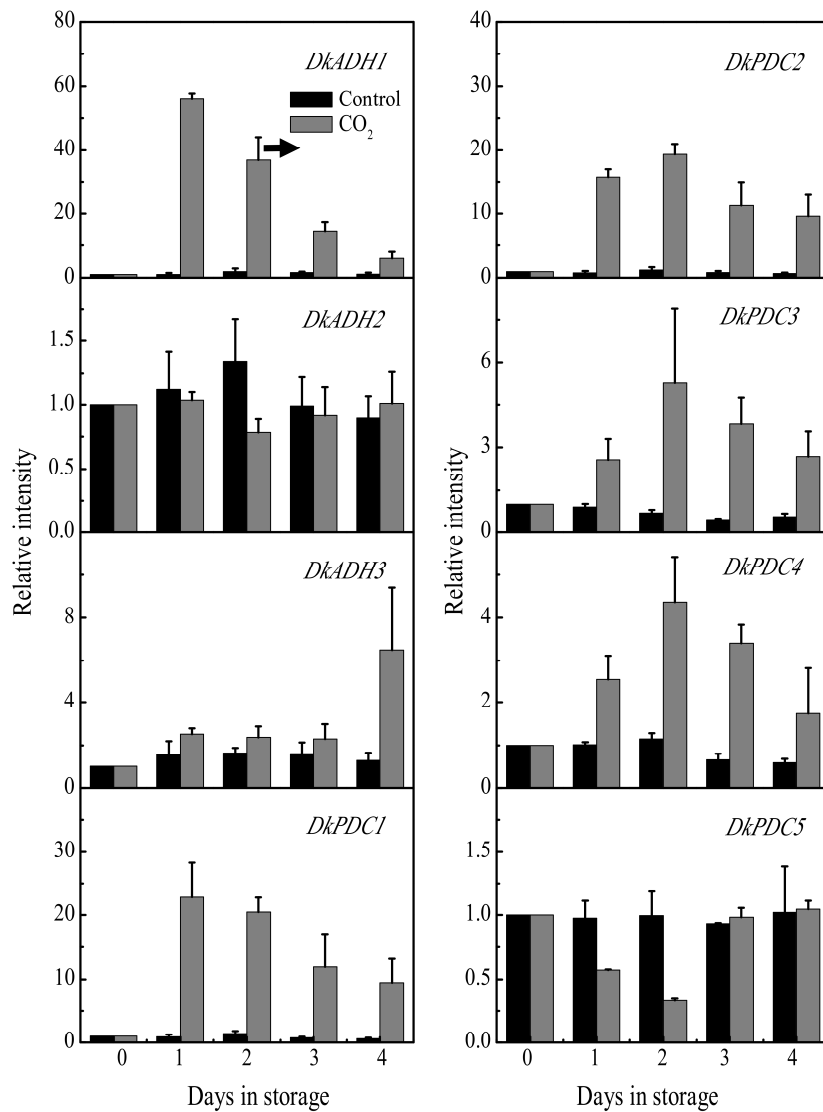


## Supplementary Figure S2



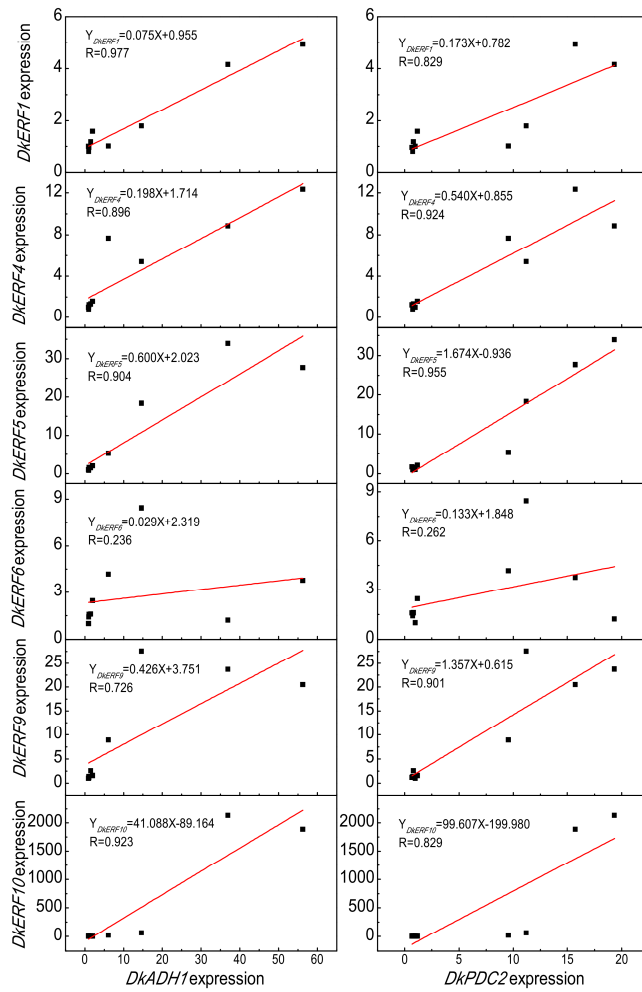
Differential expression of *DkADH* and *DkPDC* genes in various 'Mopan' plant tissues. S, stems; L, leaves; P, petals; F, mature fruit flesh. Each column height indicates relative intensity. Mature fruit values were set as 1. Error bars on each column indicate S.E. from three biological replicates.

**Supplementary Figure S3**



Differential expression of *DkADH* and *DkPDC* genes in response to 2d CO<sub>2</sub> treatment at 20 °C. Mature ‘Mopan’ fruit were treated with 95% CO<sub>2</sub> for 2 d (the related physiology data were reported in our previous publication, Yin *et al.*, 2012). Black columns and grey columns represent relative mRNA abundance of the genes in control and CO<sub>2</sub> treated fruit, respectively. Horizontal arrow represents the end day of the treatment. For the relative mRNA abundance, day 0 fruit was set as 1. Error bars indicate S.E.s from three biological replicates.

Supplementary Figure S4



Correlation of transcripts abundance of *DkERF* genes with *DkADH1* and *DkPDC2*

### Supplementary Figure S5

>DKADH1 promoter

ACAAGAAATTAAGTTTAGTGATTAAATTAACAAAAACACCAAATTTTATGACGTTTA  
ATGTTATTTACCCTAAAAATTGACATGTTATATATATACAACACCGGACGTACATTGCAC  
GCAGCTGATATGATTTGGCGGGTCCACTTGGCCCGTGGCGGGACCCACCTAATCCATAG  
ACCCCATAGGAACCTGTAGGCACACATCTTACTTTTCTTCCTCTGTTTCTTATTAC  
AGAAAATTTACTATATATATATTATGTAGGTTGAAATTTTCGGCCATCACCCCATCATCAT  
CAAGAAAAACAAAGCAGAAAAATAGTAACCGCCAAGGACAGGACATTGAAGATAACC  
TCTGCATACTTATATTAATATATAATATATCTTTGTGGAAAAATGTTAAGGGCAACATAAC  
ATTTAGTATGATAGTTTGACGTAAGCAAATGTGAGAGGGTTCGGTGTAGGCCTCACCCCTC  
TCCTTACCCCTGTTAGCCTGTGCAATAGAACAAAACCTTATCTTTGTGAGTGTAAAT  
ATTTGTTGCTGTTTAAATGTGATGCCTTGTCTGCCTTAGAGAATCTCACCGAGGCTGCC  
ACGTTAACTAATGGTTCAGTGCTAAGACAAATTAATTAGATTAACCTTTTAATTAGAAT  
GATAATTATTCTGGGAAATAATTTGAATTCACACAAACGGCGTGTATTGACCGTCCGAAT  
AAAACCAGGAAACAGCCAAAATACCATGGAATCAGCAATCCTGTTGGCAGTTTTGCAA  
TTTGCCCTGGTGTAAATCCGAGGGTGTAGCTGTCATCTTTCACGGAGTCCATCAAACACT  
GCACACATCACCTCTACGTTAAATATTCTGAAATACTCCAACCTTACTCTCCCCTCTTT  
ATCTTCCCTCTTACCGTCTACTATAAATAAATCGTCAACCCCGCAAGTCTCAGCACCC  
CACGCAAACCAACTGCGTATATATATATAAAGAAAGTTCTGAGGAAAAAGAAAATTA  
GCCACAGAGATG

>DkPDC2 promoter

ATAATCAAGCTTCAGTGTTTCGACTGATATCGAATCAAATTGAACTGGAAGCCATTTACG  
ATTAATATTAAGATCAAGGGACCTAAACTATAATCTCTTGGACAAGTCGATCTGAAATCA  
ATTTTAGAGTTGGAACATAATTTGAATACCCCTACCTACAATCAATTATCAAAGGGAAG  
TTAGAACATCTCAACTAGGTGTAATAAAAAAGAGTCTGGAATGATGAAGCCTTCCCTC  
AACAGGAGGATTATTTTACGTCCACGTCTTACATACCATGAAACATTTTCGTCCAATAATA  
TTTCACTCGTCTGTTTGACAACATTTAGTTAAAAAATATATTTTTTAATTTCTATAAAA  
AACAAAACCTACTTTTGAAGAAATTTCTATAGAAAATAAGTTAAATAAAGAATTATAC  
TATGAAGTTTAATTTCAAAAAATATAGTGTATCAAACAATAAAAAATGAAATTTAATTG  
TTCGAATGTGACATTTTTTATAGAAATTTCACTATCAATCACACTCTTAATGTTTTACG  
CATAAAATTAATATTATATTGTTAAAGCAATGTAATAAATTAGTCAAATTATTTAAATATT  
TTAATATTTAAATACCAAATAGGATGTTTTGAATATTAGGAACTAAATGTGGTAATTTT  
AAATTATTGGGTCAACGCCGTGAAACAAAATAATAAACGGTTAAATTGCAAAGCTGC  
CCCTCAAACCGGCATGCCTGAGCTTACCAACAGACTTTGCCTTCTAAGACGCCGCC  
CCTGTTTTCTTCGTCTTACCCTTACAAATACTCTCTCCTCCGTCACACAAATTTCAATCA  
TAGCCCAACAATTTTCAATCATCCAGCTTTCTCTGTAATCCATTTCTGTATATTTCTAG  
CTTCTGTTCAAGTAATTACCATG

Sequences of *DkADH1* and *DkPDC2* promoter. The start codon is highlighted in purple.