**Supplementary Figure 1**: RT-PCR reactions performed using primers for constitutive genes such as 25S and GADPH and cDNA from roots (R), leaves (L), shoot (S), floral buds smaller than 0.5 cm (1), floral buds from 0.5 to 1.0cm (2) and floral buds from 1.0 to 3cm (3) as templates.

**Supplementary Figure 2**: RT-PCR reactions performed using primers for the PePISTILLATA gene and cDNA from roots (R), leaves (L), shoot (S), floral buds smaller than 0.5 cm (1), floral buds from 0.5 to 1.0cm (2) and floral buds from 1.0 to 3cm (3) as templates. Three different cycle numbers were tested. Note differences in band intensity were proportional.

Supplementary Table 1

**Primer sequences used for RT-PCR**

| PRIMER | Gene (clone) | Primer sequence | Fragment size |
|---|---|---|---|
| **PSEPF**<br>**PSEPR** | SEPALLATA<br>(PACEPE1001G10) | 5´-GATGAGGAGGCATCAAATGT-3´<br>5´-CTCAGGAGAGCTTTCAAGGA-3´ | 561bp |
| **PPISF**<br>**PPISR** | PISTILLATA<br>(PACEPE3002E10) | 5´-GTCTGCTCAAGAAAGCCTAT-3´<br>5´-CTGTTCTCTGTGATGCTGAG-3´ | 425bp |
| **PAGAF**<br>**PAGAR** | AGAMOUS<br>(PACEPE3011A12) | 5´-CGCCGAAATCGAGTACATGC-3´<br>5´-CTTGCTTGAGGTGCTATCTT-3´ | 684bp |
| **PFULF**<br>**PFULR** | FRUITFULL<br>(PACEPS3005F02) | 5´-GGCAATGGCTGAGCAGGAAG-3´<br>5´-GTTTATTAGGCCAGGCCCAT-3´ | 463bp |
| **PSHTF**<br>**PSHTR** | SHATTERPROOF<br>(PACEPS3001E12) | 5´-GTGATGTTCACCTGAGAACA-3´<br>5´-CATCGGTTCACCTTCCTCTT-3´ | 608bp |
| **PAMEN8F**<br>**PAMEN8R** | MEN8<br>(PACEPS2001A09) | 5´-CGCGTCCGTGATTGAACTGC-3´<br>5´-CTGACGCTCCTGAGTGATCA-3´ | 532bp |
| **PKANF**<br>**PKANR** | KANADY<br>(PACEPE3008B09) | 5´-GCAGTACGGTCGGAATTCCC-3´<br>5´-GTCGATTACGCGTCCGTGAT-3´ | 486bp |
| **PYABF**<br>**PYABR** | YABBY<br>(PACEPE3005G07) | 5´-GAACTGCAATCTTTCACCT-3´<br>5´-CTGTGTCTGAGGCTAATGC-3´ | 654bp |
| **PTCPF**<br>**PTCPR** | TCP9<br>(PACEPE3023H04) | 5´-CTGACGCTCCTGAGTGATCA-3´<br>5´-GCTCAGTTCTATCAGCAAGA-3´ | 620bp |
| **PACTINF**<br>**PACTINR** | Actin*<br>(PACEPE3018B03) | 5´-ACCCACAACAGAGCACAACA-3´<br>5´-CCAGTGGTGGTGAAGGAGTAA-3´ | 658bp |
| **P25SRRNAF**<br>**P25SRRNAR** | 25S*<br>(PACEPE3028D02) | 5´-CCTTCGCGCTCTCTGTGAT-3´<br>5´-GCTGTCAAACTGGGCAAGAT-3´ | 404bp |
| **PGADPHF**<br>**PGADPHR** | GADPH*<br>(PACEPE3001F02) | 5´-AGCCAAACCATCTTGTCAGG-3´<br>5´-GAAGAGCAAGGCAGTGTGGT-3´ | 643bp |

*** These genes were used as positive controls, as they are supposed to express constitutively.**

Supplementary Table 2

List of accession numbers for the sequences used in the phylogenetic analyses

| **Gene** | **Accession number** |
|---|---|
| A. thaliana MADS (APETALA1) | At1g69120 |
| A. thaliana MADS (CAULIFLOWER) | At1g26310 |
| A. thaliana MADS (FRUITFULL) | At5g60910 |
| A. thaliana MADS (AGL79) | At3g30260 |
| A. thaliana MADS (AGL6) | At2g45650 |
| A. thaliana MADS (AGL13) | At3g61120 |
| A. thaliana MADS (AGL15) | At5g13790 |
| A. thaliana MADS (AGL32) | At5g23260 |
| A. thaliana MADS (APETALA3) | At3g54340 |
| A. thaliana MADS (SVP) | At2g22540 |
| A. thaliana MADS (AGL24) | At4g24540 |
| A. thaliana MADS (PISTILLATA) | At5g20240 |
| A. thaliana MADS (AGL42) | At5g62165 |
| A. thaliana MADS (AGL71) | At5g51870 |
| A. thaliana MADS (AGL72) | At5g51860 |
| A. thaliana MADS (ANR1) | At2g14210 |
| A. thaliana MADS (AGL18) | At3g57390 |
| A. thaliana MADS (SEPALLATA1) | At5g15800 |
| A. thaliana MADS (SEPALLATA2) | At3g02310 |
| A. thaliana MADS (SEPALLATA3) | At1g24260 |
| A. thaliana MADS (SEPALLATA4) | At2g03710 |

Supplementary Table 2 (cont.)

| Gene | Accession number |
|---|---|
| A. thaliana MADS (AGL21) | At4g37940 |
| A. thaliana MADS (AGL17) | At2g22630 |
| A. thaliana MADS (AGL16) | At3g57230 |
| A. thaliana MADS (MAF2) | At5g65050 |
| A. thaliana MADS (MAF1) | At1g77080 |
| A. thaliana MADS (AGL69) | At5g65070 |
| A. thaliana MADS (AGL70) | At5g65060 |
| A. thaliana MADS (AGL68) | At5g65080 |
| A. thaliana MADS (FLC) | At5g10140 |
| A. thaliana MADS (AGL63) | At1g31140 |
| A. thaliana MADS (AGL12) | At1g71692 |
| A. thaliana MADS (AGAMOUS) | At4g18960 |
| A. thaliana MADS (SEEDSTICK) | At4g09960 |
| A. thaliana MADS (SHATTERPROOF1) | At3g58780 |
| A. thaliana MADS (SHATTERPROOF2) | At2g42830 |
| A. thaliana MADS (SOC1) | At2g45660 |
| A. thaliana MADS (AGL33) | At2g26320 |
| A. thaliana MADS (AGL14) | At4g11880 |
| A. thaliana MADS (AGL19) | At4g22950 |
| A. thaliana TCP1 | At1g67260 |
| A. thaliana TCP2 | At4g18390 |
| A. thaliana TCP3 | At1g53230 |

Supplementary Table 2 (cont.)

| Gene | Accession number |
|---|---|
| A. thaliana TCP4 | At3g15030 |
| A. thaliana TCP5 | At5g60970 |
| A. thaliana TCP6 | At5g41030 |
| A. thaliana TCP7 | At5g23280 |
| A. thaliana TCP8 | At1g58100 |
| A. thaliana TCP9 | At2g45680 |
| A. thaliana TCP10 | At2g31070 |
| A. thaliana TCP11 | At2g37000 |
| A. thaliana TCP12 | At1g68800 |
| A. thaliana TCP13 | At3g02150 |
| A. thaliana TCP14 | At3g47620 |
| A. thaliana TCP15 | At1g69690 |
| A. thaliana TCP16 | At3g45150 |
| A. thaliana TCP17 | At5g08070 |
| A. thaliana TCP18 | At3g18550 |
| A. thaliana TCP19 | At5g51910 |
| A. thaliana TCP20 | At3g27010 |
| A. thaliana TCP21 | At5g08330 |
| A. thaliana TCP22 | At1g72010 |
| A. thaliana TCP23 | At1g35560 |
| A. thaliana TCP24 | At1g30210 |
| A. thaliana KANADI1 | At5g16560 |
| A. thaliana KANADI2 | At1g32240 |

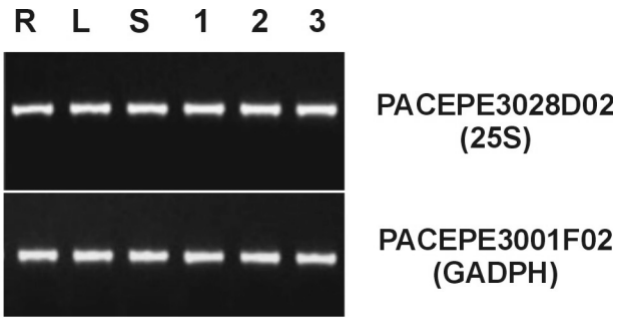
Supplementary Table 2 (cont.)

| **Gene** | **Accession number** |
|---|---|
| A. thaliana KANADI3 | At4g17695 |
| A. thaliana KANADI4 | At5g42630 |
| A. thaliana LTP1 | At2g38540 |
| A. thaliana MEN8 | At5g52160 |
| A. thaliana A9 | At5g62080 |
| A. thaliana LTPx | At2g13820 |
| A. thaliana PILTP | At5g64080 |
| A. thaliana PILTP3 | At5g07230 |
| A. thaliana YABBY1/FIL | AF136538 |
| A. thaliana YABBY2 | AF136539 |
| A. thaliana YABBY3 | AF136540 |
| A. thaliana YABBY4/INO | AF136547 |
| A. thaliana YABBY5 | AK119091 |
| A. thaliana YABBY6/CRC | AF132606 |
| Brassica napus A9 | CAA43890 |
| Ipomoeaea nil KANADI | Q2PF88 |
| Oryza sativa KANADI1 | Os09g23200 |
| Oryza sativa KANADI2 | Os08g33050 |
| Oryza sativa YABBY1 | AB274013 |
| Oryza sativa YABBY2 | AB274014 |
| Oryza sativa YABBY3 | AB274015 |
| Oryza sativa YABBY4 | AB274016 |
| Oryza sativa YABBY5 | AB274017 |

Supplementary Table 2 (cont.)

| **Gene** | **Accession number** |
|---|---|
| Oryza sativa YABBY6 | AB274018 |
| Oryza sativa YABBY7 | AB274019 |
| Oryza sativa DL | AB106553 |
| Oryza sativa YY1 | BAA23617 |
| Physcomytrella patens KANADI1 | EDQ81763 |
| Physcomytrella patens KANADI2 | EDQ73668 |
| Physcomytrella patens KANADI3 | EDQ65761 |
| Zinia elegans KANADI1 | BAD11206 |
| Zinia elegans XILO | BAD24657 |
| Zea maysLTP-like | CAB65538 |
| Zea mays MEN8 | CAA11913 |
| Zea mays KANADI1 | A0S5W2 |

Supplementary Figure 1




Supplementary Figure 2