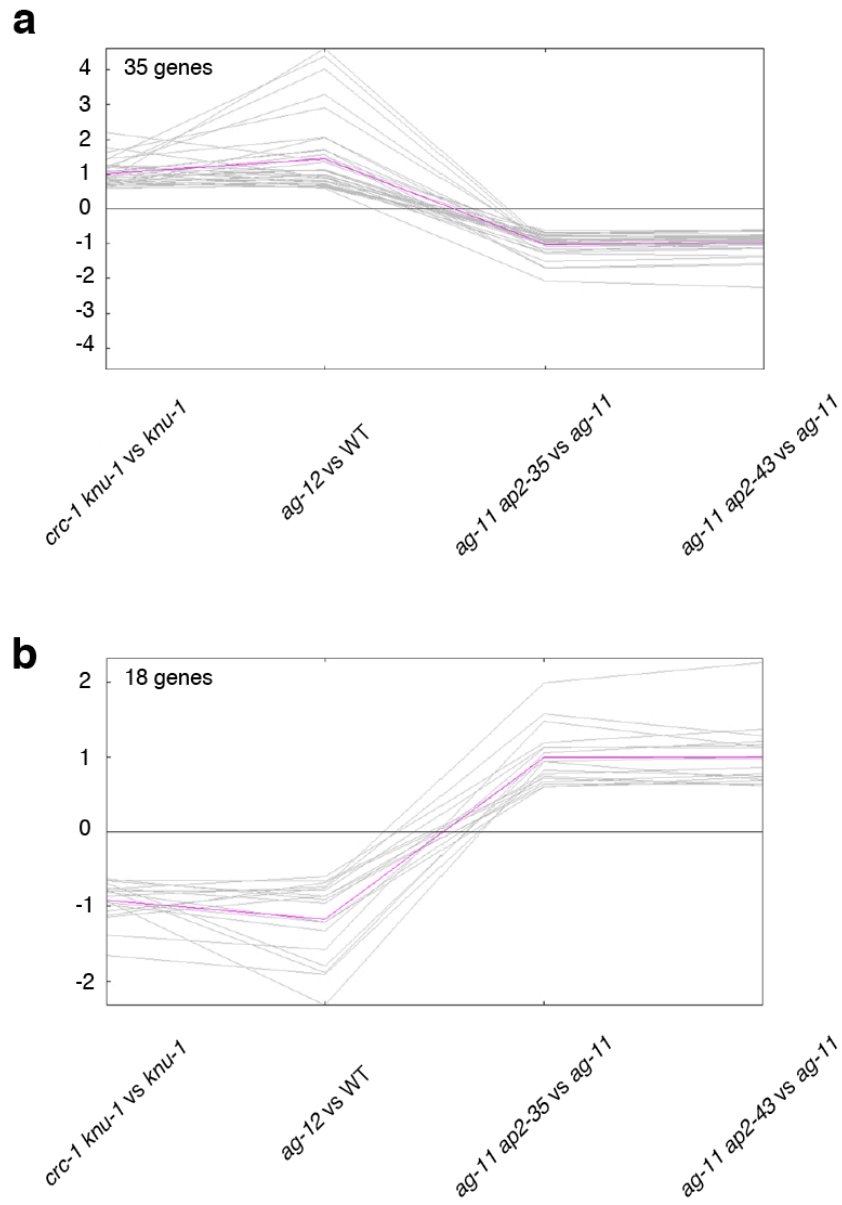1   **Supplementary Materials**
2
3   Chromatin-mediated feed-forward auxin biosynthesis in floral meristem determinacy
4   Yamaguchi et al.
5
6

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3
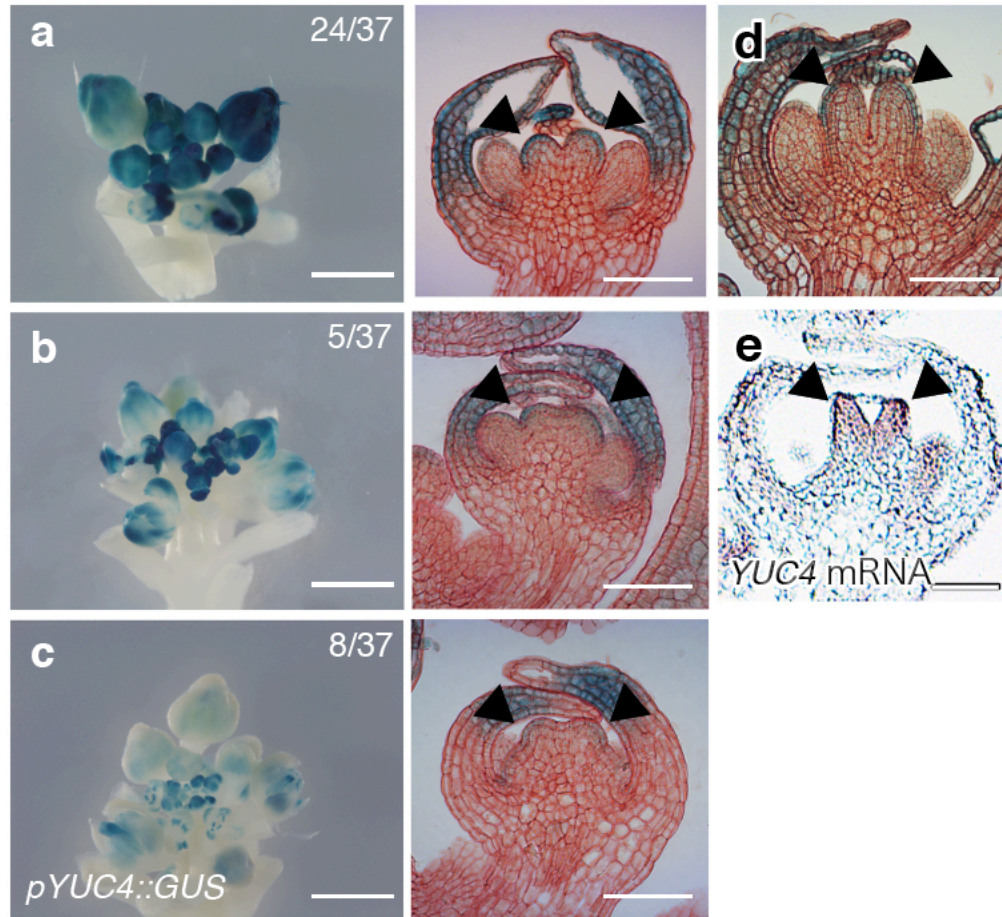4 **Supplementary Figure 1** Gene expression changes of 53 genes downstream of AG and CRC. **a**
5 Graphs display $\log_2$ expression changes of the 53 targets based on four public transcriptome
6 datasets. One cluster contains the 35 genes that are upregulated in *crc-1 knu-1* compared to
7 *knu-1*. **b** The other cluster contains the 18 genes that are downregulated in *crc-1 knu-1*
8 compared to *knu-1*.
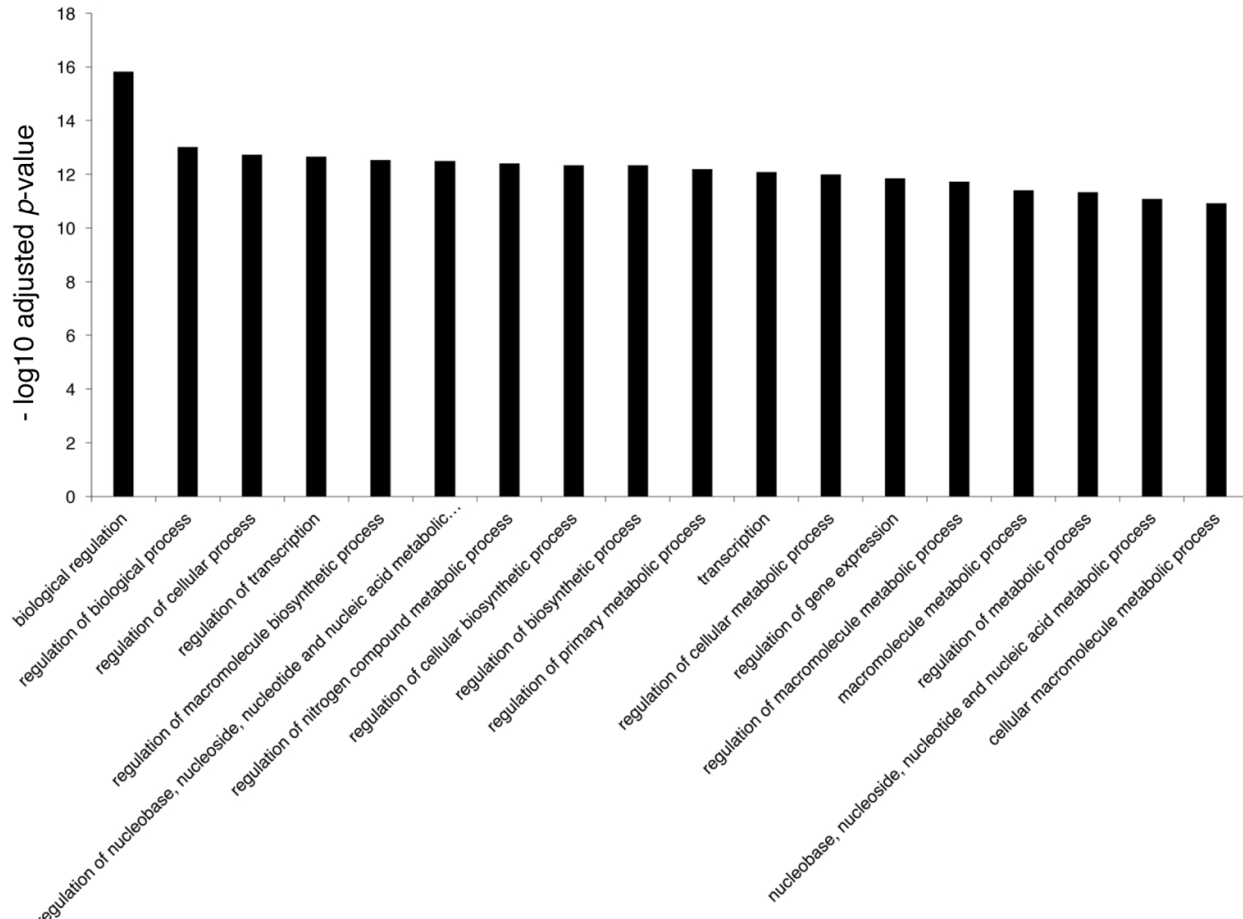
1
2   **Supplementary Figure 2** GO term enrichment analysis of the 53 genes. Graphs display $-\log_{10}$
3   adjusted p-values of the 53 targets based on agriGO followed by REVIGO. The false discovery
4   rate (FDR) was lower than 1.7×10^{-10}.
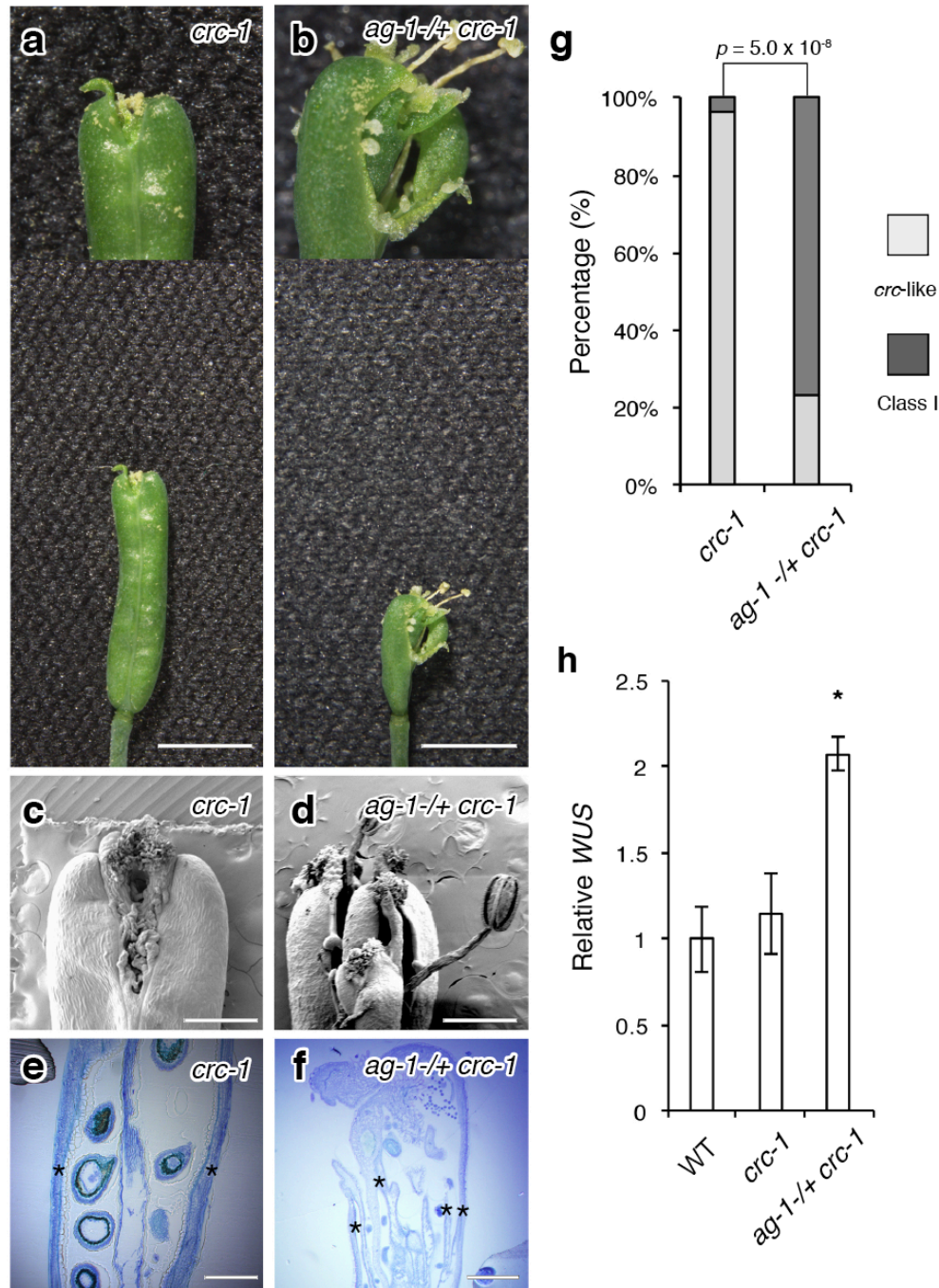
1
2 **Supplementary Figure 3** Indeterminate phenotype of *ag-1 -/+ crc-1*. **a**, **b** Morphology of *crc-1*
3 (**a**) and *ag-1 -/+ crc-1* (**b**) fruits. Above: Close-up views of fruit tips. Below: Whole fruits.
4 Arrowheads indicate stigma structures. **c**, **d** Scanning electron micrograph of *crc-1* (**c**) and
5 *ag-1 -/+ crc-1* (**d**) fruits. **e**, **f** Longitudinal section of *crc-1* (**e**) and *ag-1 -/+ crc-1* (**f**) fruits.
6 Asterisks indicate carpels. **g** Quantification of the mutant phenotype. *p*-values were calculated
7 with a Chi-Square test. **h** mRNA abundance of the stem cell marker *WUS* in wild-type, *crc-1*,
8 and *ag-1-/+ crc-1* flowers. The values are represented as the means ± SEMs. *p*-values were
9 calculated with a Student's *t*-test. Bars = 1 cm in **a**, **b**; 1 mm in **c**, **d**; 500 μ m in **e**, **f**.

Supplementary Figure 4 *YUC4* expression in floral buds. **a–c** GUS staining of *pYUC4::GUS* in the inflorescences (left) and stage 6 floral buds (right). Independent T1 lines were categorized in three difference classes depending on expression levels: lines with strong (**a**), intermediate (**b**), and weak (**c**) signals. Specifically, 24, 5, and 8 out of 37 lines showed strong, intermediate, and weak expression, respectively. The representative line from the strong category were shown. **d** GUS staining of *pYUC4::GUS* in the stage 7 floral buds. **e** *YUC4* expression pattern, as determined by *in situ* hybridization. Arrowheads indicate abaxial side of epidermal cells in carpels at stage 6. Bars = 3 mm in **a–c** (left); 50 μ m in **a–c** (right), **d, e**.
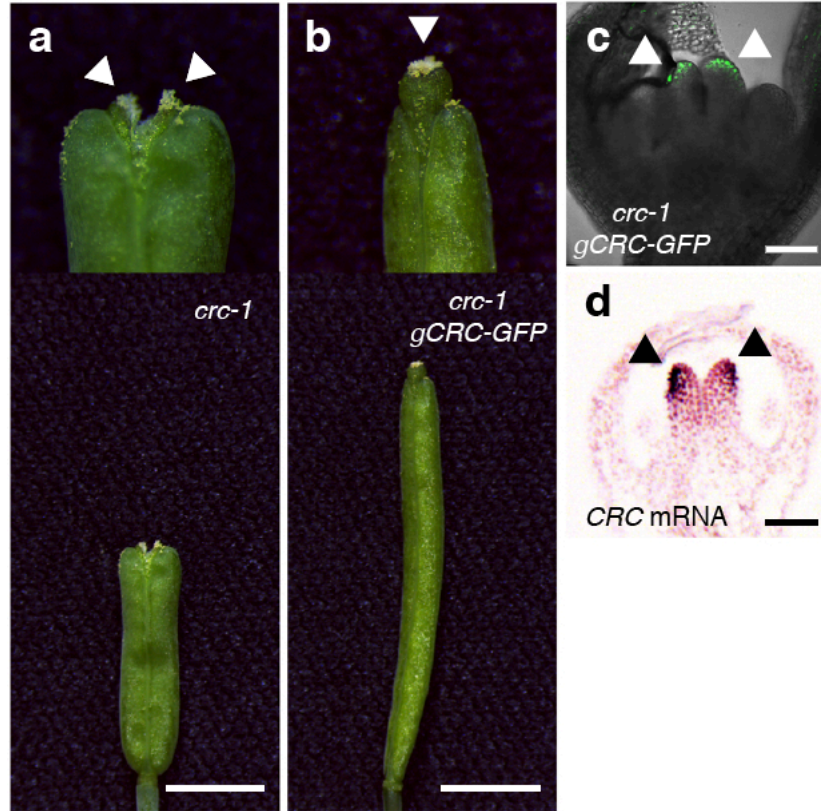
1
2
3 **Supplementary Figure 5** Expression of g*CRC-GFP* and *CRC* mRNA. **a**, **b** Phenotypic rescue of
4 the *crc-1* mutant phenotype by *gCRC-GFP* expression. Morphology of *crc-1* (**a**) and *crc-1*
5 *gCRC-GFP* (**b**) plants. Top: Close-up views of fruit tips. Bottom: Whole fruits. Arrowheads
6 indicate stigma structures. **c** *gCRC-GFP* expression in wild-type stage 6 floral buds. **d** *In situ*
7 hybridization of *CRC* mRNA in wild-type stage 6 floral buds. Arrowheads indicate the abaxial
8 side of carpel primordia. Bars = 5 mm in **a**, **b**; 50 μm in **c**, **d**.
9

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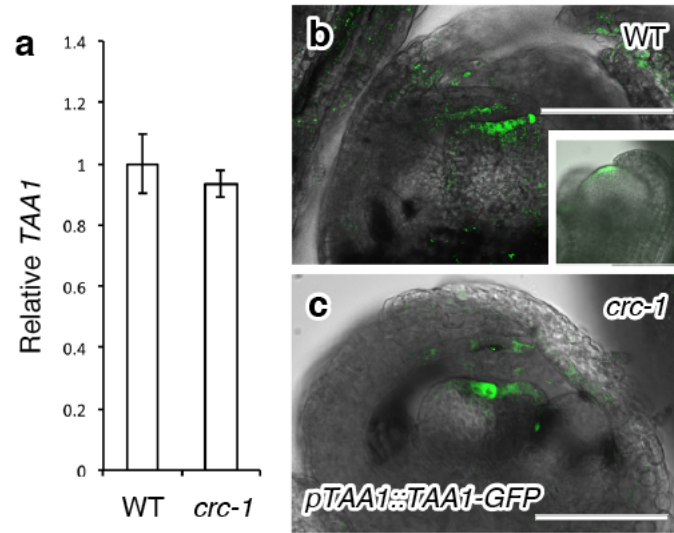
2
3
4   **Supplementary Figure 6** *TAA1* expression in the *crc-1* mutant. **a** *TAA1* expression in wild-type,

5   and *crc-1*. The values are represented as the means ± SEMs. **b**, **c** TAA1-GFP in longitudinal

6   sections of wild-type (**b**), and *crc-1* (**c**) stage 6 floral buds. Inset was TAA1-GFP expression in

7   stage 4 floral buds. Bars = 50 μ m in **b**, **c**.

```
4TarvenseYUC4:58907-59887      --------TC-TAATATCATGTACTATGATGAGACAAACTGAGGGCAAATTCAAGCCTGA
BnapusYUC41:12408-12873        TGTGTGGTCATGTAACTATGATCTATGATGAGACAAAATGAGGGAGAAATTCAAGCCTGA
BrapaYUC4:18227-18692          TGTGTGGTCATGTAACTATGATCTATGATGAGACAAAATGAGGGAGAAATTCAAGCCTGA
LalabamicaYUC4:10757-11228     AATGTGGTCATGTAACTATGTTGA--GACAAATCGAGAGTGAGGGCAAATTCAAGCCTGA
AthaYUC4:1570-2042             AGTGTGGTCATGTAACTATGGTGA--GAAAAATTGAGGTTGAGGGCAAATTCAAGCCTGA
AlyraYUC4:240239-240713        AGTGTGGTCATGTAACTATGGTTA--GACAAATTGAGGTTGAGGGCAAATTCATGCCTGA
CrubellaYUC4:86652-87138       AGTGTGGTCATGTAACTATGGTGA--GACAAATTGAGGCTGAGGGCAAATTCAAGCCTGA
CsativaYUC4:41129-41606        AGTGTGGTCATGTAACTAT---------GGTATTGAGGTTGAGGGCAAATTCAAGCCTGA
                                *  *                     *        **   ******* ******

TarvenseYUC4:58907-59887       CAGAAAAATTCCAAAGAGCATTGGGTCGTAAAAT--------GCAGAAGGAGAA-AATTA
BnapusYUC41:12408-12873        CAGAAAAATTCCAAAGAGCACTGAGTCGGGAGGAT-------ACAGAATGAGAA-ATTTG
BrapaYUC4:18227-18692          CAGAAAAATTCCAAAGAGCACTGAGTCGGGAGGAT-------GCAGAATGAGAA-AATTG
LalabamicaYUC4:10757-11228     CAGAAAAATTCCAAAGGCATTGTCTCGGGTTAATG--------CATAAGAAGAAAATAGA
AthaYUC4:1570-2042             CAGAAAAGTTCCAAAGAGC--------ATTGAGTCGGATAATGCAGAAGGAGAA-ATTGG
AlyraYUC4:240239-240713        CAGAGAAATTCCAAAGAGC--------AGTGAGTAGGATAATGCAGAAGGAGAA-AATGG
CrubellaYUC4:86652-87138       CAGAAAAATTCCAAAGAGAAT------ACTGAGTCGGATAATGCAGAAGGAGAA-AATGG
CsativaYUC4:41129-41606        CAGAAAAATTCCAAAGAGCATTGAGTCGGAATGTCGGATAATGCAGAAGGAGAA-AATGG4
                                ****  **  ********                        **  **   **** *

TarvenseYUC4:58907-59887       TAGAAGAGGGCAGAGG----AAGATGACGCTTTTCTGGGACCCAAAATCTTTTTTCTACT
BnapusYUC41:12408-12873        AAGAAGATGCCAGAGGAAGATATATGACGCTTGTGTAGGACCTAAAATCGTTTGTCTACA
BrapaYUC4:18227-18692          AAGAAGATGCCAGAGGAAGATATATGACGCTTGTGTAGGACCTAAAATCTTTTGTCTACA
LalabamicaYUC4:10757-11228     AATAAGAGTCCAAAGG----AAGATGATGTTT--TTGTAGGACATGATACTTTTGTCTGC
AthaYUC4:1570-2042             AAGAAGAGGCCAGAGC----AAGATGACGTTTTCATGGGACCCTAAATTCTTTTGTCTAC
AlyraYUC4:240239-240713        AAGAAGATGCCAGAGG----AAGATGACGTTTTTATGGGACCCTAAACTCTTTTGTCTAC
CrubellaYUC4:86652-87138       AAGAAGAGGCCAGAGG----AAGATGACGTTTTTATGGGACCGTTAATTCTTTTGTCTAC
CsativaYUC4:41129-41606        TAGAAGAGGCCAGAGG----AAGATGACGTTTTTGAGGGACCCTAAATTCTTTTGTCTAC
                                * ****   ** **        * **** * **                *    ***

TarvenseYUC4:58907-59887       GTGTAAATATTCATTTTCTTGTCATTATATCCAAAGTATATATATGAACATCTCTATTGT
BnapusYUC41:12408-12873        GTATATAATATTCTTGTTTTGCCAT-----------------------------------
BrapaYUC4:18227-18692          GTATATAATATTCTTGTTTTGCCAT-----------------------------------
LalabamicaYUC4:10757-11228     ATTGTAATATTCATATTTTACCAT-----------------------------------
AthaYUC4:1570-2042             ATTGTAATATTCATATTTTTGCCAT-----------------------------------
AlyraYUC4:240239-240713        ATTGTAATATTCATATTTTTGCCAT-----------------------------------
CrubellaYUC4:86652-87138       ATTGTAATATTCATATTTTTGCCAT-----------------------------------
CsativaYUC4:41129-41606        ATTGTAATGTTCATATTTTTGCCAT-----------------------------------
                                *        *    *   *   *  * **  ***

TarvenseYUC4:58907-59887       GATTTCTTAATGAGAATCTTATACTACAAGTAAATTAAAAATAAATAAAAGATTGAGAAA
BnapusYUC41:12408-12873        ------------------------------------------------------------
BrapaYUC4:18227-18692          ------------------------------------------------------------
LalabamicaYUC4:10757-11228     ------------------------------------------------------------
AthaYUC4:1570-2042             ------------------------------------------------------------
AlyraYUC4:240239-240713        ------------------------------------------------------------
CrubellaYUC4:86652-87138       ------------------------------------------------------------
CsativaYUC4:41129-41606        ------------------------------------------------------------

TarvenseYUC4:58907-59887       AGATGATAACCTATTCTCAATTTAAAGATTTTGAGATCCATGTGAAAATCCTTAACATAA
BnapusYUC41:12408-12873        ------------------------------------------------------------
BrapaYUC4:18227-18692          ------------------------------------------------------------
LalabamicaYUC4:10757-11228     ------------------------------------------------------------
AthaYUC4:1570-2042             ------------------------------------------------------------
AlyraYUC4:240239-240713        ------------------------------------------------------------
CrubellaYUC4:86652-87138       ------------------------------------------------------------
CsativaYUC4:41129-41606        ------------------------------------------------------------

TarvenseYUC4:58907-59887       GGCATATACAGTATCAATATAATCTATGAGTGTGTGTGAGTAGTTCATATTTCCTGAAAA
BnapusYUC41:12408-12873        ------------------------------------------------------------
BrapaYUC4:18227-18692          ------------------------------------------------------------
LalabamicaYUC4:10757-11228     ------------------------------------------------------------
AthaYUC4:1570-2042             ------------------------------------------------------------
AlyraYUC4:240239-240713        ------------------------------------------------------------
CrubellaYUC4:86652-87138       ------------------------------------------------------------
CsativaYUC4:41129-41606        ------------------------------------------------------------

TarvenseYUC4:58907-59887       TAGATCAAAAACACAATAATTTAGAATATTAATTAAAAATTGTATGTTGTAATATATATT
BnapusYUC41:12408-12873        ------------------------------------------------------------
BrapaYUC4:18227-18692          ------------------------------------------------------------
LalabamicaYUC4:10757-11228     ------------------------------------------------------------
AthaYUC4:1570-2042             ------------------------------------------------------------
AlyraYUC4:240239-240713        ------------------------------------------------------------
CrubellaYUC4:86652-87138       ------------------------------------------------------------
CsativaYUC4:41129-41606        ------------------------------------------------------------
```

1

```
TarvenseYUC4:58907-59887      TAGATCAAAAACACAATAATTTAGAATATTAATTAAAAATTGTATGTTGTAATATATATT
BnapusYUC41:12408-12873       ------------------------------------------------------------
BrapaYUC4:18227-18692         ------------------------------------------------------------
LalabamicaYUC4:10757-11228    ------------------------------------------------------------
AthaYUC4:1570-2042            ------------------------------------------------------------
AlyraYUC4:240239-240713       ------------------------------------------------------------
CrubellaYUC4:86652-87138      ------------------------------------------------------------
CsativaYUC4:41129-41606       ------------------------------------------------------------


TarvenseYUC4:58907-59887      TATCAAAGTCTGTTATGCATAAGTTTAAATTATATACTAATATCATTTTCAATTGGTATT
BnapusYUC41:12408-12873       ------------------------------------------------------------
BrapaYUC4:18227-18692         ------------------------------------------------------------
LalabamicaYUC4:10757-11228    ------------------------------------------------------------
AthaYUC4:1570-2042            ------------------------------------------------------------
AlyraYUC4:240239-240713       ------------------------------------------------------------
CrubellaYUC4:86652-87138      ------------------------------------------------------------
CsativaYUC4:41129-41606       ------------------------------------------------------------


TarvenseYUC4:58907-59887      AGTTAGATTTAATGCAATAATATTATATTATTATTATTTTAATTAATATTAAAATATAAA
BnapusYUC41:12408-12873       ------------------------------------------------------------
BrapaYUC4:18227-18692         ------------------------------------------------------------
LalabamicaYUC4:10757-11228    ------------------------------------------------------------
AthaYUC4:1570-2042            ------------------------------------------------------------
AlyraYUC4:240239-240713       ------------------------------------------------------------
CrubellaYUC4:86652-87138      ------------------------------------------------------------
CsativaYUC4:41129-41606       ------------------------------------------------------------


TarvenseYUC4:58907-59887      AATGTGAAATTTGAAAAGAAAAAAAAATATTATCTGTATAATTATGATTTTCTCATATCTA
BnapusYUC41:12408-12873       ------------------------------------------------------------
BrapaYUC4:18227-18692         ------------------------------------------------------------
LalabamicaYUC4:10757-11228    ------------------------------------------------------------
AthaYUC4:1570-2042            ------------------------------------------------------------
AlyraYUC4:240239-240713       ------------------------------------------------------------
CrubellaYUC4:86652-87138      ------------------------------------------------------------
CsativaYUC4:41129-41606       ------------------------------------------------------------


TarvenseYUC4:58907-59887      TATGATACTAAAGTATATATAATATTAATAAGTATATTAATATTATATTAATCAGAGGCT
BnapusYUC41:12408-12873       ------------------------------------------------------------
BrapaYUC4:18227-18692         ------------------------------------------------------------
LalabamicaYUC4:10757-11228    ------------------------------------------------------------
AthaYUC4:1570-2042            ------------------------------------------------------------
AlyraYUC4:240239-240713       ------------------------------------------------------------
CrubellaYUC4:86652-87138      ------------------------------------------------------------
CsativaYUC4:41129-41606       ------------------------------------------------------------


TarvenseYUC4:58907-59887      CTAAGCATCTAACATTGCTAATATTGATTGATCTATCATCATCTATCCAAGATCCACAAT
BnapusYUC41:12408-12873       --------TATCGATAGTTTATACAGCATTGCTGATGTTGATCCATCCAAGATCCACAAT
BrapaYUC4:18227-18692         --------TATCGATAGTTTATACAGCATTGCTGATGTTGATCCATCCAAGATCCACAAT
LalabamicaYUC4:10757-11228    --------TATCGATAGTGTATACAAGATTGATGATGTTGATCCATCCAAGTTCCACAAT
AthaYUC4:1570-2042            --------TATCGATAGTGTAAACAAGATTGCTGATGGTGATCCATCCAAGGACCACAAT
AlyraYUC4:240239-240713       --------TATCGATAGTGTAAACAAGATTGCTGATGTTGATCCATCCAAGAACCACAAT
CrubellaYUC4:86652-87138      --------TATCGATAGTTTATACAAGATTGCTGATGTTGATCCATCCAAGAACCACAAT
CsativaYUC4:41129-41606       --------TATCGATAGTTTATACAAGATTGCTGATGTTGATCCATCCAAGAACCACAAT
                                       ** *    * *       *      ** * *** ******* *******


TarvenseYUC4:58907-59887      ATTCCTCGTCTAACCAAAGGGACCATCGATACACCTATGTAACATGCATATAAAGTAGAT
BnapusYUC41:12408-12873       ATTCCTCGTCTAACCAAAGGGACCATCAATACATGCATGTAAAGTAA--------------
BrapaYUC4:18227-18692         ATTCCTCGTCTAACCAAAGGGACCATCAATACATGCATGTAAAGTAG--------------
LalabamicaYUC4:10757-11228    ATTCCTCGTCTAACCAAAGGGACCATGATGAATACATTATATGTAACATGCATATAAAGT
AthaYUC4:1570-2042            ATTCCTCGTCTAACCAAAGGGACCATCAATACACTATGTAACAT-GCA----TATAGAGT
AlyraYUC4:240239-240713       ATTCCTCGTCTAACCAAAGGGACCATTGATACTCTATATATGTA-ACATGCGTATAAAGT
CrubellaYUC4:86652-87138      ATTCCTCGTCTAACCAAAGGGACCATCGATACACTATGTAACAT-GCATATGAACGAAGT
CsativaYUC4:41129-41606       ATTCCTCGTCTAACCAAAGGGACCATCGATACACTATGTAACGT-GCATATAGAGTAGT-
                              ************************      *


TarvenseYUC4:58907-59887      TTAC---TAGTAGCTGATAC------------------ACTTGTATTTTTCTTCCAGCTT
BnapusYUC41:12408-12873       --ATTACTAGTAGCTGATACACTTGCATAG-----CTTGT----AATTTTCTCCTAGATT
BrapaYUC4:18227-18692         --ATTACTAGTAGCTGATACACTTGCATAG-----CTTGT----AATTTTCTCCTAGATT
LalabamicaYUC4:10757-11228    ATATTACTAGTAGCTGATACACTTGTAT------------------TTTTCTTCCAGCTT
AthaYUC4:1570-2042            AGATTAATAGTATAGCCGA---TACACTTGTATAACTTGTAT----TTTTCTTCCAGCTT
AlyraYUC4:240239-240713       AGATT--AATAGTAGCTGA---TACACTTGTATAACTTGTAT----TTTTCTTCCAGCTT
CrubellaYUC4:86652-87138      AGATTAGTAGTAGCTGATACACTTGTATTGATAACTTGTATTTTTCTTCCAGCAGGCTT
CsativaYUC4:41129-41606       ---TTAATAGTAGCTGATACACTTGTATAACTT----GTATTTTTCTTACCAGCTAGCTT
                                       *         *                           * *  *  * **
```

1

9

1　**Supplementary Figure 7** DNA sequence alignment of the CRM1 region in the *YUC4* promoter.

2　DNA sequence information for all eight species was obtained from GenBank. No potential

3　YABBY binding sites were found in this region.

4

1

a
CRM2

```
BnapusYUC4:14178-14351    ----TAGTATGTTTAATAGTATTTATATAGCAATCTCAAAGGTTCGTAGGGGAAGTGGAG
BrapaYUC4:16831-17018     ----TAGTATGTTTAATAGTATTTATATAGCAACCTCAAAGGTTCGTAGGGGAAGTGGAG
CrubellaYUC4:85613-85792  AAAATATGTTAAATATTTGATAATGCAAACCGCAGAGGAGATGATATAGGGGAAGTGGAG
AthaYUC4:3184-3344        -AAA-----TATGTTAAATATTGATATTGCAACCTTATAGAGATCATAGGGGAAGTGGAG
TarvenseYUC4:57715-57890  -AACTATGCTAAGTATTTAGTATATTTCAACCTCAAAGGAGGATCATAGGGGAAGTGGAG
AlyraYUC4:238353-239045   -AAATATGTTAA--ATATTGATATTGCAACCTCAGAGAAGAGATTATAGGGGAAGTGGAG
CsativaYUC4:42737-42908   -AGATATGCTGA--AAATTGATATTGCAACCTC--AGAGGAGATCATAGGGGAAGTGGAG
                              *                                   **************

BnapusYUC4:14178-14351    GTAGGCTGCATTAGTTGACATTTTACCGAAGGAGTGGTCAGTCATGCGCAACGCAATTAC
BrapaYUC4:16831-17018     GTAGGCTGCATTAGTTGACATTTTACCGAAGGAGTGGTCAGTCATGCGCAACGCAATTAC
CrubellaYUC4:85613-85792  GTCGGCTGCATAAGTTGACATTTAA-CGAAGGAGTGGTCAGTCATGCGCAAACTCAGTTA
AthaYUC4:3184-3344        GTCGGCTGCATTAGTTGACATTTAA-CGAAGGAGTGGCAAGTCAAATTACATTTTCCACA
TarvenseYUC4:57715-57890  GTCGGCTGCATTAGTTGACATTTAA-CGAAGAAGTGGCCAGTCATGCGCAACACAGATAC
AlyraYUC4:238353-239045   GTCGGCTGCATTAGTTGACATTTAA-CGAAGGAGCGGTCAGTCATGCGCAACTCAATTAC
CsativaYUC4:42737-42908   GTCGGCTGCATTAGTTGACATTTAA-CGAAGGAGTGGTCAGTCATGCGCAACTCAATTGC
                          ** ******* *********** * ***** ** **  *****         *

BnapusYUC4:14178-14351    ATTTTCC---ACATATCTACTTATTAATTATGTGTTTGGTACAATCCTCATTAAT----A
BrapaYUC4:16831-17018     ATTTTCC---ACATATCTACTTACTAATATTAATTATGTGTGTTGGTACAATCCTCATTA
CrubellaYUC4:85613-85792  CATTTTCCACATACATCTACTTATTAATTATGTGTTTGGTGCTATCCTCATTAATTGTGT
AthaYUC4:3184-3344        ------------TATCCAC------------------------------------------
TarvenseYUC4:57715-57890  ATTTTCC---ACATCTATTTATTACTTATGTGTTTGGTACAATCCTCGTTAATTGTTC
AlyraYUC4:238353-239045   ATTTCCA----CATATCTACTTATTAATTATGTCATTATGTGTTTGGACCCTTGTTTGAA
CsativaYUC4:42737-42908   ATTTTCC---ACATATCTACTTATTAATTATGTGTTTGGTGCAATCCTCATTAATTGTGC
                                       *** *
```

b
CRM3

```
BrapaYUC4:16453-16513     ACCTTTGTTTAGGTAAGCAATGTTAA--TTAGTAGGAAGTTAATTACCTGAGTCTTCTATAAT-
TarvenseYUC4:57093-57154  GCATTTGTTAAAGCAAGAAATGTTAA--TTATTAGGCATTTTATTACATGAATCTTTCTATTTC
BnapusYUC41:14668-14728   ACCTTTGTTTAAGTAAGAAATGTTAA--TTAGTGGGAAGTTAATTACCTGAGTCTTCTATAAT-
CsativaYUC4:43331-43392   ACCTTTGTTAAAGTAAACAATATTTGAGTATTAGACATTTA-TTTAAATAAATCTTCCGTTTT-
AthaYUC4:3507-3569        ACCTTTGTTAAAGTAAACAATATTTGATTAATTGATAATTTAATGACATGAATCTTCTGTTTC-
AlyraYUC4:238044-238106   ACCTTTGTTAAAGTAACCAGTATTTGATTATTAGGCAATTTAATTACATGAATCTTCTGTTTC-
                          .*.*****:*.* ** .*.*.**:.  *:: :.. .: *: :* *..*.*.**** :::
```

c

AAATATGTTAAATATTGATATTGCAACCTTATAGAGATCATAGGGGAAGTGGAGGTCGG
CTGCATTAGTTGACATTTAACGAAGGAGTGGCAAGTCAAATTACATTTTCCACATATCC
ACTTATTAATTATGTGTTTGGTGCAATTCTCATTAATTGTGCTTGAATATATCATCCCT
                                                        CRM2
CCAGCTACCTCAAAATCAAAGCGTAGAAGTAGTTATCTTTTGATTATGTAT**CTTTCTTT**
CTCACGAAAATGTAATAATCTATATGGTATACTATAATTTATGTTGGAAAGAAGATGAA
TACTTATGATGGAAAGAAGGTCATCTAAACCTTTGTTAAAGTAAACAATATTTGATTAA
TTGATAATTTAATGACATGAATCTTCTGTTTC
                                                        CRM3

2
3
4   **Supplementary Figure 8** DNA sequence alignment of the CRM2 and CRM3 regions in the *YUC4*
5   promoter. **a**, **b** DNA sequence alignment of the CRM2 (**a**) and CRM3 regions (**b**). DNA sequence
6   information for all eight spices was obtained from GenBank. **c** DNA sequence between CRM2
7   and CRM3 in the *Arabidopsis thaliana YUC4* promoter where a potential YABBY binding site
8   (bold) was identified.

a

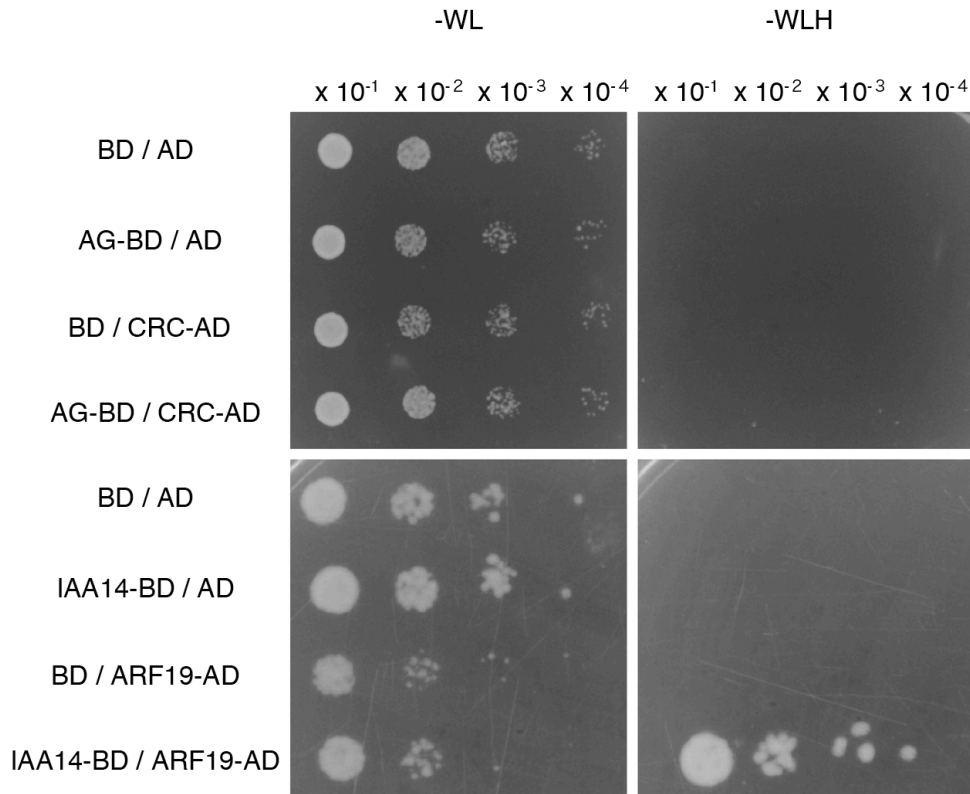CRM4

b

CRM4

WT

CRM4

pYUC4 del

c

Relative *YUC4*

WT

#1 #2

pYUC4 del

Supplementary Figure 9 DNA sequence alignment and functional analysis of the CRM4 region in the *YUC4* promoter. **a** DNA sequence alignment of the CRM4 region. DNA sequence information for all eight species was obtained from GenBank. Bold: three potential YABBY binding sites. Pale blue line: significant AG binding region. Blue triangle: position of the highest AG peak. Red square: possible CArG box. **b** Diagram of the CRM4 deletion by CRISPR/Cas. gRNA1 gRNA1, 5'–taaattcttagtgattataa–3'; gRNA2, 5'–gtaagaaagaagaagaagga–3'. **c** *YUC4* mRNA levels in the wild type and the CRM4 deleted lines. The values are represented as the means ± SEMs. p-values were calculated using a Student's t-test. *: $p < 0.05$ compared to the wild type.

Supplementary Figure 10 Regulatory region of the *YUC* genes. **a–d** Identification of the YABBY–binding sites by a DNase I HS assay and sequences of potential YABBY–binding sites in the *YUC1* (**a**), *YUC2* (**b**), *YUC4* (**c**), and *YUC6* (**d**) genes. Pink, GA[GA]AGAAA; Green, CC[CA][TC]C[TA][CT]C; Yellow, CCCCAC. Flower–specific DNase I HS sites, which contain four potential YABBY–binding sites were specifically observed in the 5′ region of the *YUC4* promoter.
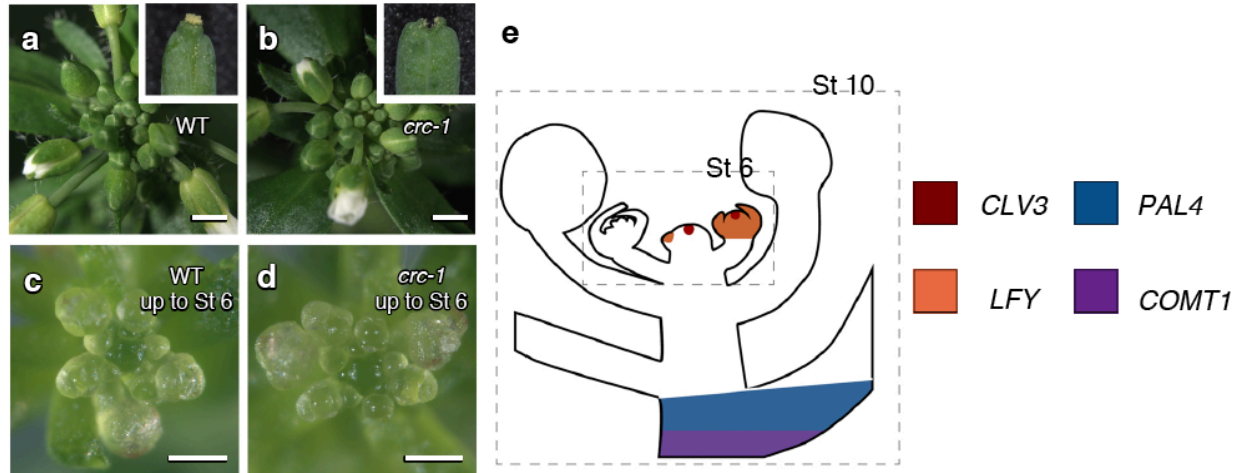
1
2
3 **Supplementary Figure 11** Trimming of wild-type and *crc* inflorescences for auxin quantification.
4 **a**, **b** Top view of wild-type (**a**), and *crc-1* (**b**) shoot apexes. Fruit tips were shown in insets. **c**, **d**
5 Top view of wild-type (**c**) and *crc-1* (**d**) shoot apexes after removal of flowers from plants at
6 stage 7 or later. Bars = 1 mm in **a**, **b**; 200 μm in **c**, **d**. **e** Schematic diagram of spatial *CLV3*, *LFY*,
7 *PAL4*, and *COMT* expression patterns.
8

	-WL				-WLH			
	$\times 10^{-1}$	$\times 10^{-2}$	$\times 10^{-3}$	$\times 10^{-4}$	$\times 10^{-1}$	$\times 10^{-2}$	$\times 10^{-3}$	$\times 10^{-4}$
BD / AD								
AG-BD / AD								
BD / CRC-AD								
AG-BD / CRC-AD								
BD / AD								
IAA14-BD / AD								
BD / ARF19-AD								
IAA14-BD / ARF19-AD								

Supplementary Figure 12 Yeast–two hybrid test for an AG–CRC interaction. Left; Yeast grown under nonselective conditions (−WL). Right; Yeast grown under selective conditions (−WLH). Double transformants carrying both the *pDEST22* and *pDEST32* empty vectors were used as a negative control. A positive AUXIN RESPONSE FACTOR19 and IAA14 interaction was detected under our experimental conditions[1].
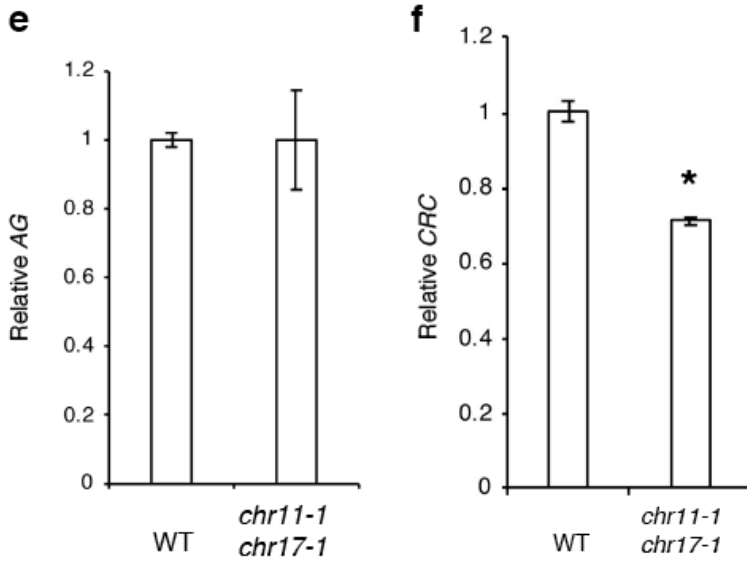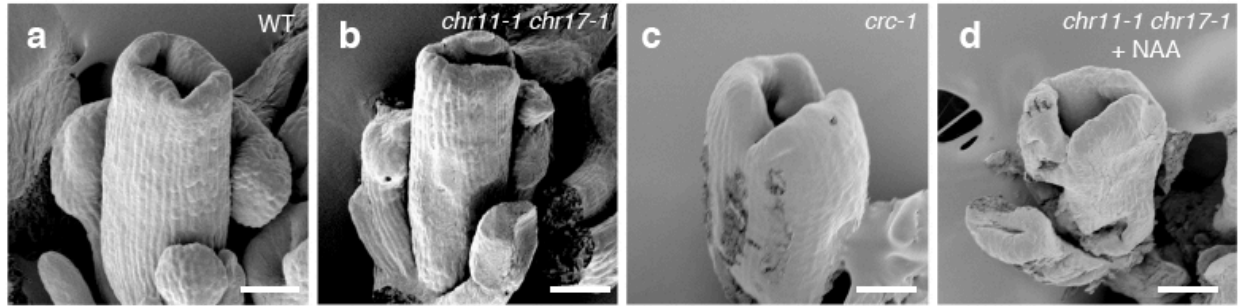
Supplementary Figure 13 Characterization of the *chr11-1 chr17-1* double mutants. **a–d** Scanning electron micrograph of the wild-type (**a**), *chr11-1 chr17-1* (**b**), *crc-1* (**c**), and auxin-treated *chr11-1 chr17-1* (**d**) gynoecia. **e, f** *AG* (**e**) and *CRC* (**f**) mRNA levels in the wild-type and *chr11-1 chr17-1* floral buds. The values are represented as the means ± SEMs. *p*-values were calculated using a Student's *t*-test. *: $p < 0.05$ compared to the wild type. Bars = 60 μm in **a–d**.

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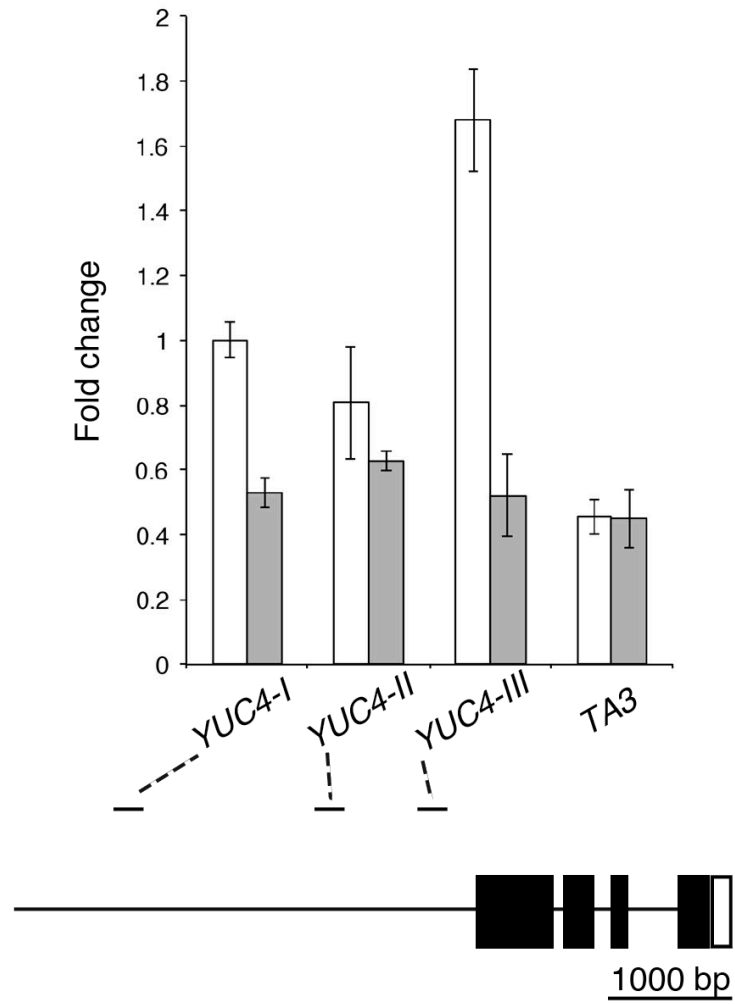
Supplementary Figure 14 AG ChIP enrichment at the *YUC4* locus. Top: Anti AG ChIP to test

AG occupancy at the *YUC4* locus. The values are represented as the means ± SEMs. Bottom:

Diagram of the ChIP-qPCR amplicons tested.

5
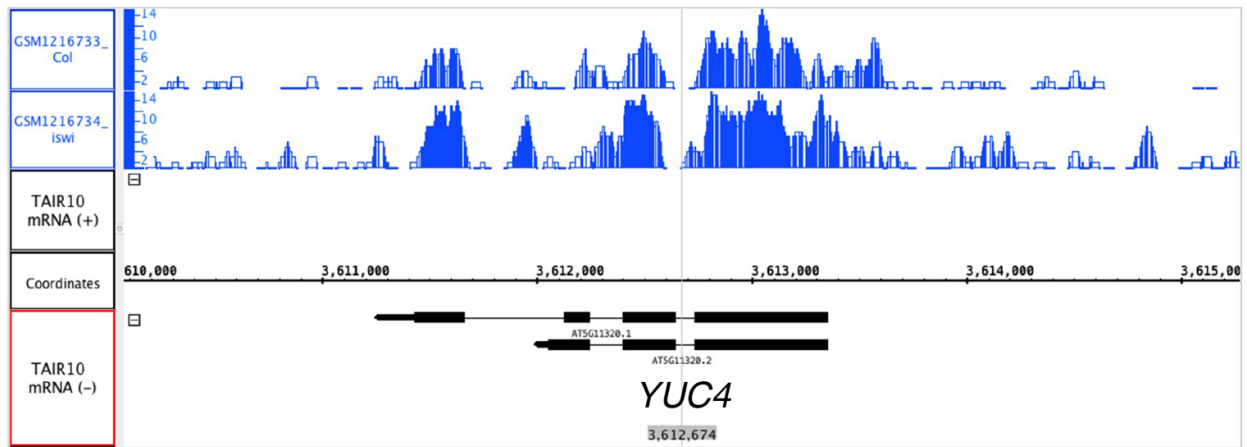
Supplementary Figure 15 Published MNase-seq data in wild-type and *chr11-1 chr17-1* plants. Nucleosome positioning identified by MNase-seq. Blue bars: Nucleosome occupancy. Black square: exon. Black line: intron.

1
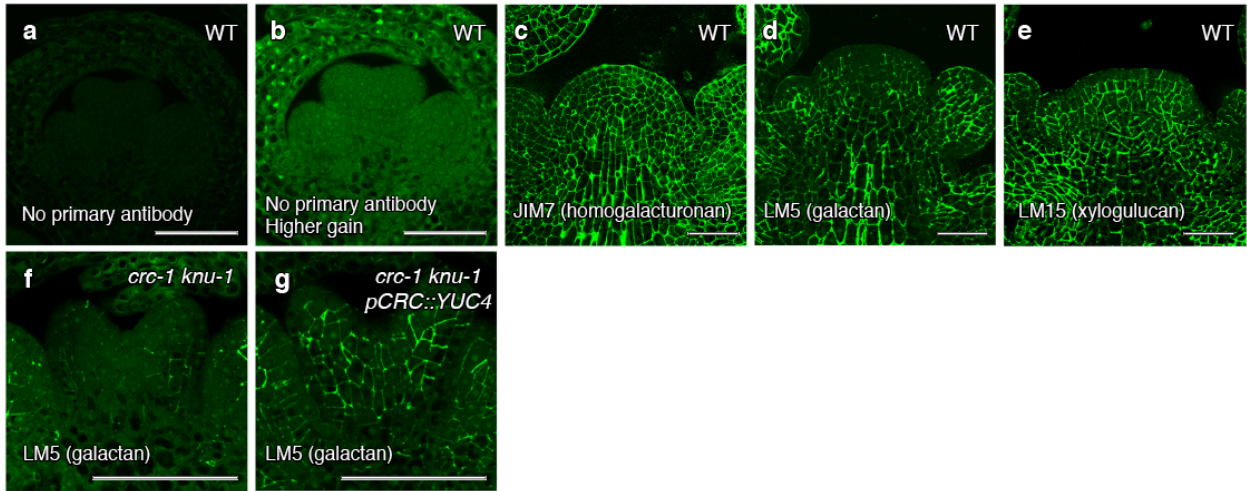
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4 **Supplementary Figure 16** Immunolocalization of cell wall components in the inflorescence
5 meristem. **a**, **b** Immunolocalization using longitudinal sections of wild-type stage 6 flowers
6 without the primary antibody. Without primary antibody (**a**). Without primary antibody when
7 images were taken at higher gain settings. (**b**). Cell wall specific-fluorescence was not
8 observed without primary antibody. The same section was used for **a** and **b**. **c**
9 Immunolocalization of homogalacturonan epitopes was detected with JIM7 in longitudinal
10 sections of the wild-type inflorescence meristem. **d** Immunolocalization of (1–4)–b–D–galactan
11 epitopes was detected with LM5 in longitudinal sections of the wild-type inflorescence
12 meristem. **e** Immunolocalization of xylogulucan epitopes was detected with LM15 using
13 longitudinal sections of the wild-type inflorescence meristem. **f, g** Immunolocalization of
14 (1–4)–b–D–galactan epitopes was detected with LM5 in longitudinal sections of the *crc-1*
15 *knu-1* (**f**) and *crc-1 knu-1 pCRC::YUC4* (**g**) terminating floral meristem. Half-strength of
16 antibody was used. Bars = 50 μm in **a–g**.
17
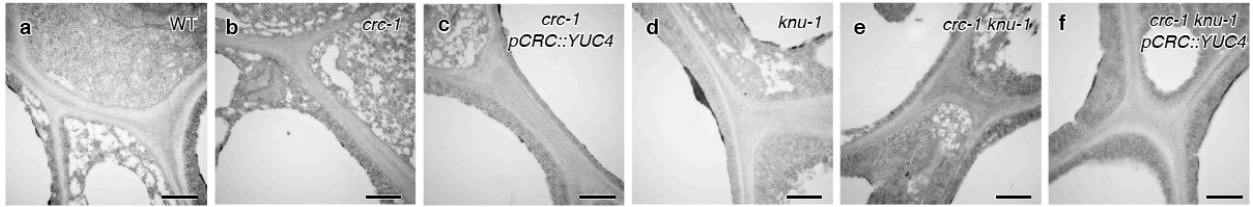
Supplementary Figure 17 TEM image of stage 6 terminating floral meristem cells. **a–f** TEM images of longitudinal sections from wild-type (**a**), *crc-1* (**b**), *crc-1 pCRC::YUC4* (**c**), *knu-1* (**d**), *crc-1 knu-1* (**e**), and *crc-1 knu-1 pCRC::YUC4* (**f**) terminating floral meristem at flower development stage 6. All images are shown at the same magnification. Bars = 500 nm in **a–f**.
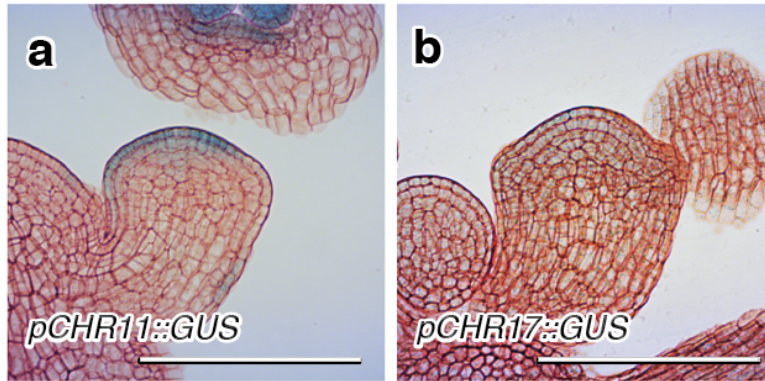
1
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3 **Supplementary Figure 18** Expression of *pCHR11::GUS* and *pCHR17::GUS* in stage 3 floral buds.
4 **a**, **b** GUS staining of *pCHR11::GUS* (**a**) and *pCHR17::GUS* (**b**) in stage 3 floral meristems. Bars =
5 50 μ m in **a**, **b**.
6
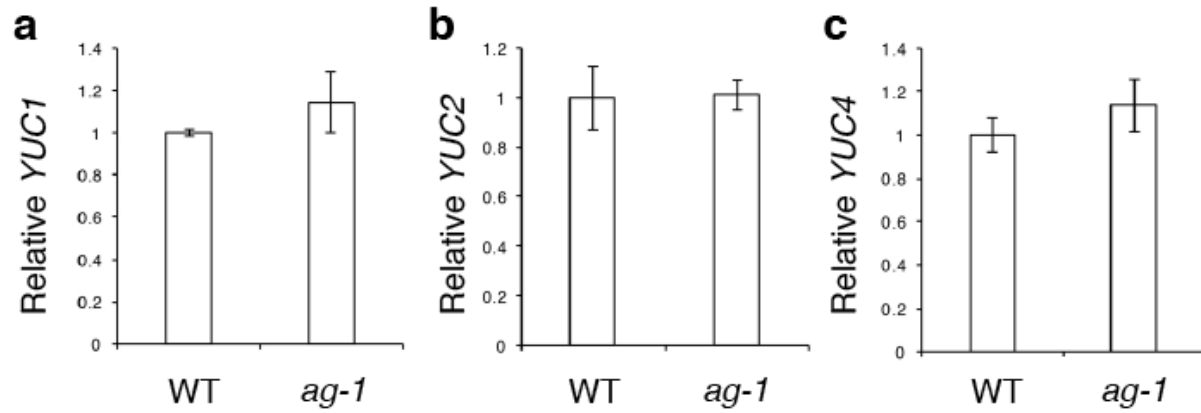
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3 **Supplementary Figure 19** Expression of *YUC* family genes in the wild type and *ag-1* mutant.
4 **a–c** mRNA abundance of *YUC1* (**a**), *YUC2* (**b**), and *YUC6* (**c**) in wild-type and *ag-1* plants. The
5 values are represented as the means ± SEMs.
6

Supplementary Table 1 Summary of transcriptomic datasets used to identify genes regulated by AG and CRC.

Dataset	Developmental stage/tissue	Number of genes	Annotation	Data References
WT vs *ag-12**	More than 3 weeks old (flowers at stage 12)	6673	TIGR 5.0	2
knu-1 vs *crc-1 knu-1**	Floral bud clusters up to stage 10	8150	TAIR 7	3
ag-11 ap2-35 vs *ag-11***	Floral bud clusters up to stage 7	2093	TAIR 10	4
ag-11 ap2-43 vs *ag-11***	Floral bud clusters up to stage 7	2026	TAIR 10	4
AG ChIP	Synchronized floral bud clusters at stage 5	1421	TAIR10	5

* Array data were downloaded from TAIR (ATGE_58A-C, ATGE_92A-C) and GEO (GSE88969) and reanalyzed. Genes showing at least a 1.5-fold change in expression were considered to be differentially expressed.
** The data were obtained from Huang et al., 2016[4]. Genes showing a 1.5-fold change in expression were considered to be differentially expressed, as written in Huang et al., 2016[4].

Supplementary References

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