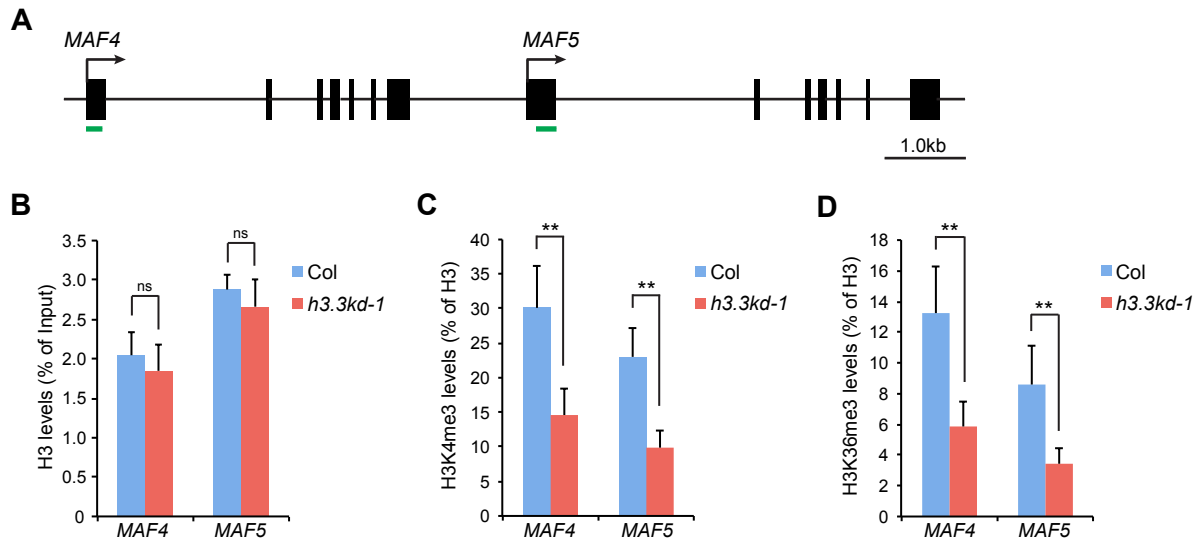


**Supplemental Figure S1. Flowering phenotype and gene expression analyses in *h3.3kd* lines.**

(A) The flowering time of *h3.3kd* lines grown in long days. The total number of primary rosette and cauline leaves at flowering were counted; 12 plants for each line were scored. Values are means  $\pm$  SD.

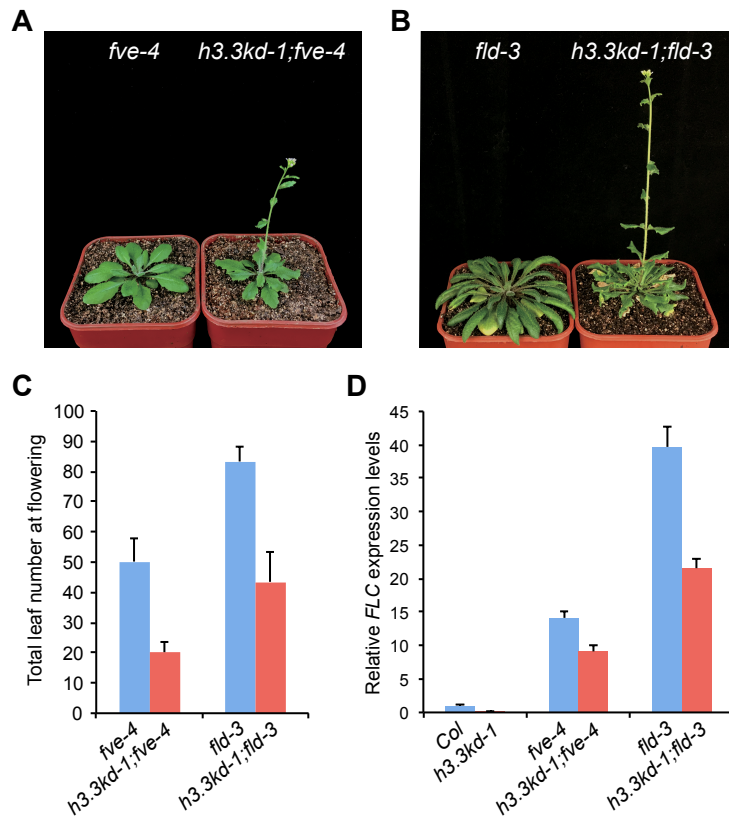
(B) Expression profiles of *FLC* and its homologs in Col and *h3.3kd-3* determined by RT-qPCR. *TUB2* was used as an endogenous control. Values are means  $\pm$  SD of three biological repeats.



**Supplemental Figure S2. Chromatin modification changes at *MAF4* and *MAF5* in *h3.3kd-1*.**

(A) Schematic structure of *MAF4* and *MAF5*. Filled boxes represent exons; arrows indicate the transcription start sites. ChIP examined regions are indicated by green lines.

(B)-(D) H3 (B), H3K4me3 (C) and H3K36me3 (D) enrichment levels at *MAF4* and *MAF5* transcription start sites determined by ChIP. The amounts of immunoprecipitated DNA fragments were quantified by qPCR, and subsequently normalized to input DNA or H3 antibody-precipitated DNA. Values are means  $\pm$  SD of three biological repeats. Statistical significance was determined by two-tailed Student's t-test (\*\*,  $P < 0.01$ ; ns, not significant,  $P > 0.05$ ).

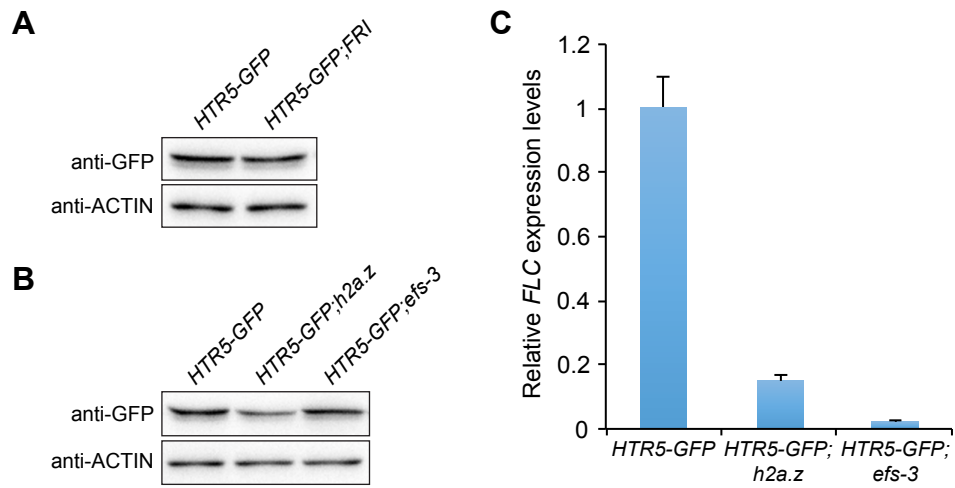


**Supplemental Figure S3. *h3.3kd-1* represses the late flowering phenotypes of *fve-4* and *fld-3*.**

(A) and (B) The flowering phenotypes of *h3.3kd-1;fve-4* (A) and *h3.3kd-1;fld-3* (B) grown in long days.

(C) The flowering time of indicated lines grown in long days. The total number of primary rosette and cauline leaves at flowering were counted; 10 plants were scored for *fve-4* and *fld-3*, 16 plants were scored for *h3.3kd-1;fve-4* and *h3.3kd-1;fld-3*. Values are means ± SD.

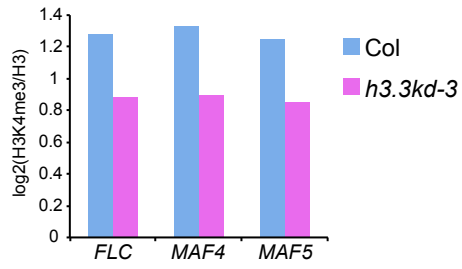
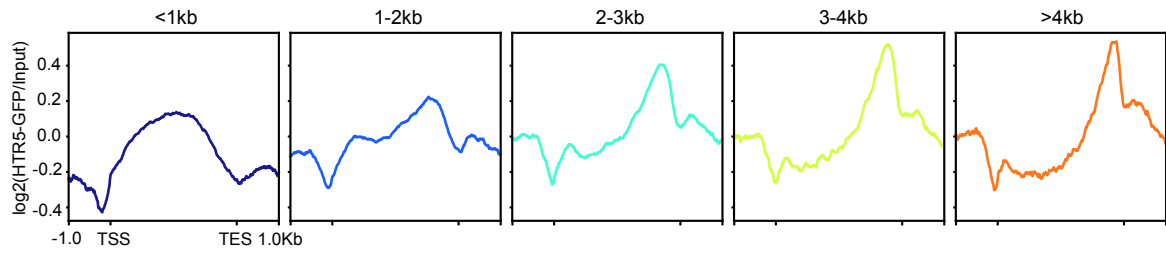
(D) Relative *FLC* transcripts determined by RT-qPCR. *TUB2* was used as an endogenous control. Values are means ± SD of three biological repeats.



**Supplemental Figure S4. HTR5-GFP and FLC expression in HTR5-GFP-related lines.**

(A) and (B) HTR5-GFP protein expression levels in indicated lines determined by western blot.

(C) Relative transcripts of *FLC* in indicated lines determined by RT-qPCR. *TUB2* was used as an endogenous control. Values are means  $\pm$  SD of three biological repeats.

**A****B****Supplemental Figure S5. ChIP-seq analysis of H3K4me3 and HTR5-GFP distribution.**

(A) Normalized H3K4me3 values over the gene body of *FLC*, *MAF4*, and *MAF5* in Col and *h3.3kd-3* determined by ChIP-seq.  
(B) Normalized ChIP-seq profiles of HTR5-GFP enrichment over genes with different lengths.

**Supplemental Table S1.** List of genes at which H3K4me3 changed more than 1.5-fold in *h3.3kd-3*.

H3K4me3 decreased in <i>h3.3kd-3</i>	H3K4me3 increased in <i>h3.3kd-3</i>
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AT1G03325	AT1G03120
AT1G04645	AT1G09250
AT1G04895	AT1G09815
AT1G05290	AT1G10100
AT1G06920	AT1G15825
AT1G07600	AT1G15830
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AT1G21866	AT2G12461
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AT1G23250	AT2G20515
AT1G23260	AT2G21060
AT1G23570	AT2G21185
AT1G23580	AT2G22170
AT1G23610	AT2G23120
AT1G23645	AT2G23130

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**Supplemental Table S2.** Primer sequences used in this study.

<b>Experiment</b>	<b>Primers (5' to 3')</b>
<b>RT-qPCR</b>	
qFLC_F qFLC_R	CCGAACTCATGTTGAAGCTTGTTGAG CGGAGATTTGTCCAGCAGGTG
qFLM_F qFLM_R	CGCTGTTGTCGTCGTATCTGC CAGTCTCAAGTTGTTCCCTCCAGAG
qMAF2_F qMAF2_R	AACTCGGAATTATCTGCCACTCAAAG CTTCCCCCATCATTAGTTCTGTCTTC
qMAF3_F qMAF3_R	GAAAGGGAGAAGTTGCTGATAGAAGAG AGCACAAGAACTCTGATATTTGTCTAC
qMAF4_F qMAF4_R	GCTTCTCCTCAGGTGATAGCATG CTGCTCTTCCAGGGACTTTAGAC
qMAF5_F qMAF5_R	TGTGTCGGAAGAGTGAAGCCAT CTGATGATCTTGGCCATGCTGT
qTUB2_F qTUB2_R	ACTGTCTCCAAGGGTTCCAGG AAGAACCATGCACTCATCAGC
<b>ChIP-qPCR</b>	
FLC_a_F FLC_a_R	CCTAATTTGATCCTCAGGTTTGGG CCGACGAAGAAAAAGTAGATAGGCAC
FLC_b_F FLC_b_R	CCTTTTGCTGTACATAAACTGGTC CCAAACTTCTTGATCCTTTTTACC
FLC_c_F FLC_c_R	GTGGAAATTCAGATGTGCTACTG ACTGGAAACTATGAAACATTGAGAG
FLC_d_F FLC_d_R	TGGTTGTTATTTGGTGGTGTG ATCTCCATCTCAGCTTCTGCTC
MAF4_ChIP_F MAF4_ChIP_R	TTAGGTCAGAAGAATTAGTCGGAG GTGGCAGAGATGATGATAAGAGCG
MAF5_ChIP_F MAF5_ChIP_R	CAGGATCTCCGACCAGTTTATACAGAC GAGGAGTTGTAGAGTTTGCCGGT
TUB2_ChIP_F	ATCCGTGAAGAGTACCCAGAT

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TUB2_ChIP_R	AAGAACCATGCACTCATCAGC
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**Pull-down  
constructs**

HIRA_EcoRI_F	gttgaattcTGATTGCGGAGAAGCCCTTTTGG
HIRA_XhoI_R	gttctcgagTCAAGAGCCCGAGTCTCTTGAG

FRI_BamHI_F	gccggatccATGTCCAATTATCCACCGACG
FRI_EcoRI_R	gttgaattcCTATTTGGGGTCTAATGATG

**BiFC and Co-IP  
constructs**

attB1_HiRA_F	ggggacaagttgtacaaaaaagcaggcttaATGATTGCGGAG AAGCCCTTT
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attB2_HiRA_R	ggggaccactttgtacaagaaagctgggttAGAGCCCGAGTCT CTTGAGTTC
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attB1_FRI_F	ggggacaagttgtacaaaaaagcaggcttaATGTCCAATTATC CACCGAC
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attB2_FRI_R	ggggaccactttgtacaagaaagctgggttTTTGGGGTCTAATG ATGAGT
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