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Supplemental Information

Co-targeting RNA Polymerases IV and V Promotes Efficient *De Novo* DNA Methylation in *Arabidopsis*

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Table S1: Primers. Related to STAR methods

	Use	Sequence 5' - 3'
<i>RDM1</i> FWD	Clone genomic <i>RDM1</i>	CACCATCATGGTATTGTAGACTAAAAC
<i>RDM1</i> REV	Clone genomic <i>RDM1</i>	TTTCTCAGGAAAAGATTGGGTCAATG
<i>FWA</i> region 1 FWD	BS-PCR-seq <i>FWA</i> region 1	TCATATAAAAAAAAAAATTAATTTTCATTTACAATAACCATT
<i>FWA</i> region 1 REV	BS-PCR-seq <i>FWA</i> region 1	GTATGGGYTTYGATAAAGAATATATGAGATTYT
<i>FWA</i> region 2 FWD	BS-PCR-seq <i>FWA</i> region 2	CTCATATATACCTTATCCCATTCAACATTCATA
<i>FWA</i> region 2 REV	BS-PCR-seq <i>FWA</i> region 2	AAGATYTGATATTTGGYTGGAAYAAATAATAAT
<i>FWA</i> region 3 FWD	BS-PCR-seq <i>FWA</i> region 3	CRCTCTTTATCCCATTCAACATTCATAC
<i>FWA</i> region 3 REV	BS-PCR-seq <i>FWA</i> region 3	TTTGGTTGAAAAAAAAATAAAAAATTTGATTGTYAGTAT
<i>AP1</i> region 1 FWD	BS-PCR-seq <i>AP1</i> region 1	GTTTTATTAATAAATTTATGGATYYGATATTAGTAYGAGATATA
<i>AP1</i> region 1 REV	BS-PCR-seq <i>AP1</i> region 1	TTTTTCTTTCTTTCTTTATAAAAAAATTATATTTAAATCTC
<i>AP1</i> region 2 FWD	BS-PCR-seq <i>AP1</i> region 2	TTTAGAGTAAGAAGTTTTTTAAAAAAGGATTAAAAATGG
<i>AP1</i> region 2 REV	BS-PCR-seq <i>AP1</i> region 2	AAAAATTTTCCCTTATAAAAAAACAACAAAAACAA
<i>AP1</i> region 3 FWD	BS-PCR-seq <i>AP1</i> region 3	AAAGATYYGAGATTTAAATATAAGTTTTTTTATAAAGGAAAG
<i>AP1</i> region 3 REV	BS-PCR-seq <i>AP1</i> region 3	ACCCTACCCCTCCCATTTTTA

Table S2. Number of plants analyzed in flowering time experiments. Related to STAR methods

Number of T1 plants shown in the flowering time dotplots in Figures S1, S2, S3

The same controls were used for all T1 flowering time dotplots.

	background	n plants
Controls	Col-0	47
	<i>fwa</i>	46
NRPD1-ZF	background (in <i>fwa</i> x)	n plants
	<i>ago4.</i>	47
	<i>ago4/6</i>	93
	<i>ago4/6/9</i>	43
	<i>clsy1</i>	38
	<i>cmt3</i>	58
	<i>dcl3</i>	40
	<i>dcl2/4</i>	55
	<i>dcl2/3/4</i>	41
	<i>drm1/2</i>	40
	<i>nrpd1</i>	47
	<i>nrpe1</i>	62
	<i>rdr2</i>	50
	<i>shh1</i>	41
<i>wt</i>	47	
RDR2-ZF	background (in <i>fwa</i> x)	n plants
	<i>clsy1</i>	113
	<i>drm1/2</i>	70
	<i>nrpd1</i>	71
	<i>nrpe1</i>	47
	<i>rdr2</i>	40
	<i>shh1</i>	48
<i>wt</i>	42	
SHH1-ZF	background (in <i>fwa</i> x)	n plants
	<i>clsy1</i>	49
	<i>drm1/2</i>	55
	<i>nrpd1</i>	114
	<i>nrpe1</i>	53
	<i>rdr2</i>	76
	<i>shh1</i>	45
<i>wt</i>	44	
DMS3-ZF	background (in <i>fwa</i> x)	n plants
	<i>ago4.</i>	55
	<i>ago4/6</i>	62
	<i>ago4/6/9</i>	96
	<i>cmt3</i>	60
	<i>dms3</i>	41
	<i>drd1</i>	74
	<i>drm1/2</i>	96
	<i>morc6</i>	46
	<i>nrpd1</i>	53
	<i>nrpe1</i>	65
	<i>rdm1</i>	72
	<i>rdr1/6</i>	63
	<i>rdr1/2/6</i>	45
<i>suvh2/9</i>	39	

	<i>wt</i>	60
RDM1-ZF	background (in <i>fwa</i> x)	n plants
	<i>dms3</i>	95
	<i>drd1</i>	62
	<i>drm1/2</i>	79
	<i>morc6</i>	57
	<i>nrpd1</i>	108
	<i>nrpe1</i>	60
	<i>rdm1</i>	54
	<i>suvh2/9</i>	70
	<i>wt</i>	82
ZF-SUVH9	background (in <i>fwa</i> x)	n plants
	<i>dms3</i>	61
	<i>drd1</i>	35
	<i>drm1/2</i>	65
	<i>morc6</i>	79
	<i>nrpd1</i>	58
	<i>nrpe1</i>	73
	<i>rdm1</i>	94
	<i>suvh2/9</i>	42
	<i>wt</i>	49
MORC6-ZF	background (in <i>fwa</i> x)	n plants
	<i>dms3</i>	75
	<i>drd1</i>	48
	<i>drm1/2</i>	81
	<i>morc6</i>	21
	<i>nrpd1</i>	138
	<i>nrpe1</i>	58
	<i>rdm1</i>	56
	<i>suvh2/9</i>	41
	<i>wt</i>	47
MORC1-ZF	background (in <i>fwa</i> x)	n plants
	<i>morc6</i>	39
	<i>wt</i>	46
ZF-DRMcd	background (in <i>fwa</i> x)	n plants
	<i>cmt3</i>	55
	<i>drm1/2</i>	47
	<i>nrpd1</i>	47
	<i>nrpe1</i>	75
	<i>wt</i>	106

Number of T2 plants shown in the flowering time dotplots in Figures 1, 2, 3 and S3

The same controls were used for NRPD1-ZF and RDR2-ZF dotplots except Col-0.

The same controls were used for SHH1-ZF, DMS3-ZF and MORC1-ZF dotplots.

The same controls were used for ZF-SUVH9 and MORC6-ZF dotplots.

controls		NRPD1-ZF background (in <i>fwa</i> x)	n plants			
			line 1	line 2	line 3	line 4
Col-0	16	<i>ago4.</i>	17	15	15	17
<i>fwa</i>	16	<i>ago4/6</i>	14	14	8	14
<i>fwa drm1/2</i>	16	<i>ago4/6/9</i>	11	12	10	12
<i>fwa nrpe1</i>	14	<i>clsy1</i>	19	18	18	15
		<i>cmt3</i>	15	19	18	16
		<i>dcl3</i>	16	17	20	16

		<i>dcl2/4</i>	21	17	18	16
		<i>dcl2/3/4</i>	26	27	12	29
		<i>drm1/2</i>	11	15	17	20
		<i>nrpd1</i>	19	19	18	19
		<i>nrpe1</i>	14	15	14	14
		<i>rdr2</i>	16	14	18	15
		<i>shh1</i>	19	11	20	10
		<i>wt</i>	21	16	20	14
n plants						
controls		RDR2-ZF background (in <i>fwa</i> x)	line 1	line 2	line 3	line 4
Col-0	14	<i>clsy1</i>	17	15	15	17
<i>fwa</i>	16	<i>drm1/2</i>	16	16	16	15
<i>fwa drm1/2</i>	16	<i>nrpd1</i>	15	15	15	15
<i>fwa nrpe1</i>	14	<i>nrpe1</i>	15	14	14	14
		<i>rdr2</i>	16	18	17	11
		<i>shh1</i>	7	11	13	11
		<i>wt</i>	13	14	15	14
n plants						
controls		SHH1-ZF background (in <i>fwa</i> x)	line 1	line 2	line 3	line 4
Col-0	10	<i>clsy1</i>	12	16	14	13
<i>fwa</i>	12	<i>drm1/2</i>	17	14	16	15
<i>fwa drm1/2</i>	11	<i>nrpd1</i>	14	13	12	12
<i>fwa nrpe1</i>	11	<i>nrpe1</i>	13	14	12	11
		<i>rdr2</i>	12	13	15	14
		<i>shh1</i>	13	16	12	18
		<i>wt</i>	14	17	13	16
n plants						
controls		DMS3-ZF background (in <i>fwa</i> x)	line 1	line 2	line 3	line 4
Col-0	10	<i>ago4.</i>	10	15	14	15
<i>fwa</i>	12	<i>ago4/6</i>	12	13	16	19
<i>fwa drm1/2</i>	11	<i>ago4/6/9</i>	12	34	35	16
<i>fwa nrpe1</i>	11	<i>cmt3</i>	15	15	17	13
		<i>dms3</i>	15	18	17	14
		<i>drd1</i>	15	14	12	10
		<i>drm1/2</i>	35	33	18	15
		<i>morc6</i>	12	14	15	16
		<i>nrpd1</i>	20	19	18	17
		<i>nrpe1</i>	11	10	13	13
		<i>rdm1</i>	34	16	14	35
		<i>rdr1/6</i>	16	14	15	12
		<i>rdr1/2/6</i>	6	12	11	12
		<i>suvh2/9</i>	14	16	19	9
		<i>wt</i>	16	18	15	16
n plants						
controls		RDM1-ZF background (in <i>fwa</i> x)	line 1	line 2	line 3	line 4
Col-0	17	<i>dms3</i>	15	14	14	14
<i>fwa</i>	16	<i>drd1</i>	12	11	13	15
<i>fwa drm1/2</i>	13	<i>drm1/2</i>	18	16	15	15
<i>fwa nrpe1</i>	13	<i>morc6</i>	17	14	15	18
		<i>nrpd1</i>	19	17	15	13
		<i>nrpe1</i>	16	16	15	15
		<i>rdm1</i>	18	18	13	20
		<i>suvh2/9</i>	21	16	15	18
		<i>wt</i>	20	12	16	15

controls		n plants				
		ZF-SUVH9 background (in <i>fwa</i> x)	line 1	line 2	line 3	line 4
Col-0	10	<i>dms3</i>	16	17	17	17
<i>fwa</i>	13	<i>drd1</i>	18	19	16	14
<i>fwa drm1/2</i>	10	<i>drm1/2</i>	17	17	18	16
<i>fwa nrpe1</i>	11	<i>morc6</i>	20	20	16	16
		<i>nrpd1</i>	12	13	12	13
		<i>nrpe1</i>	9	9	9	10
		<i>rdm1</i>	15	16	13	15
		<i>suvh2/9</i>	13	17	18	22
		<i>wt</i>	21	14	21	18

controls		n plants				
		MORC6-ZF background (in <i>fwa</i> x)	line 1	line 2	line 3	line 4
Col-0	10	<i>dms3</i>	19	17	16	18
<i>fwa</i>	13	<i>drd1</i>	17	17	15	13
<i>fwa drm1/2</i>	10	<i>drm1/2</i>	17	16	15	17
<i>fwa nrpe1</i>	11	<i>morc6</i>	19	17	15	15
		<i>nrpd1</i>	13	12	9	10
		<i>nrpe1</i>	17	16	16	16
		<i>rdm1</i>	17	17	15	14
		<i>suvh2/9</i>	18	19	20	17
		<i>wt</i>	16	19	20	18

controls		n plants				
		MORC1-ZF background (in <i>fwa</i> x)	line 1	line 2	line 3	line 4
Col-0	10	<i>morc6</i>	14	14	16	16
<i>fwa</i>	12	<i>wt</i>	17	14	14	15
<i>fwa drm1/2</i>	11					
<i>fwa nrpe1</i>	11					

controls		n plants				
		ZF-DRMcd background (in <i>fwa</i> x)	line 1	line 2	line 3	line 4
Col-0	15	<i>cmt3</i>	17	12	11	13
<i>fwa</i>	11	<i>drm1/2</i>	14	15	13	12
<i>fwa drm1/2</i>	14	<i>nrpd1</i>	13	16	13	16
<i>fwa nrpe1</i>	15	<i>nrpe1</i>	15	13	12	13
		<i>wt</i>	14	15	17	16

Number of T3 plants shown in the flowering time dotplots in Figure S1F

	n plants
Col-0	39
<i>fwa</i>	12
NRPD1-ZF (+)	13
NRPD1-ZF (-)	16