Supporting Information

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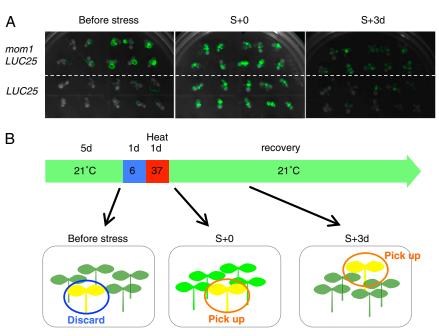


Fig. S1. Genetic screen for mutations that erase "stress memory." (*A*) Bioluminescence images of *mom1 LUC25* and *LUC25* plants before and after heat-stress treatment. Seedlings grown for 5 d at 21 °C (*Before stress*) were subjected to temperature stress (6 °C for 24 h and then 37 °C for 24 h) and then returned to 21 °C. Seedlings directly after treatment and 3 d after treatment are indicated by "S+0" and "S+3", respectively. Luciferase luminescence appears as a green signal. (*B*) Scheme of the genetic screen (details in the main text).

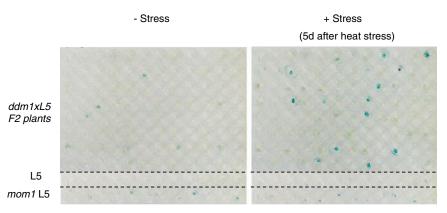


Fig. 52. The *ddm1* but not the *mom1* mutation enhances heat stress-dependent activation of transcription. Histochemical GUS staining of the cotyledons of segregating progeny of a cross between *ddm1-2* and L5. (*Left*) Control treatment. (*Right*) Heat-stressed seedlings.

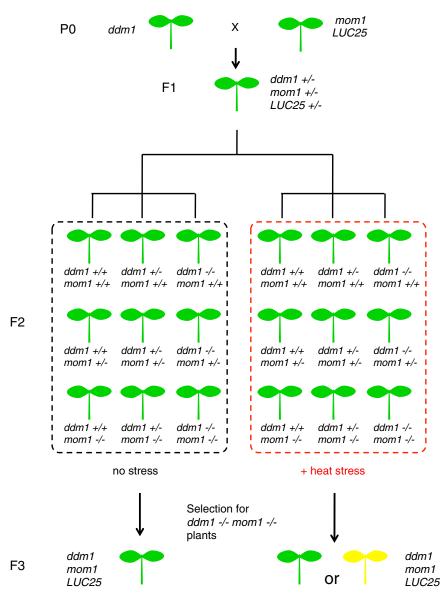


Fig. S3. Crossing scheme for the recreation of the *ddm1 mom1* double mutant line with the naïve *LUC* transgene. P0, *ddm1-2* was crossed with *mom1 LUC25*; F1, heterozygous for *ddm1* and *mom1*, and carrying the hemizygous naïve *LUC* transgene; F2, The progeny expected to include 4.69% of individuals homozygous for both *ddm1-2* and *mom1* and carrying the *LUC* transgene. F2 seedlings were separated into two subpopulations, one of which was subjected to heat stress. Bioluminescence images were captured and each plant was genotyped at the *DDM1*, *MOM1* and *LUC* loci.

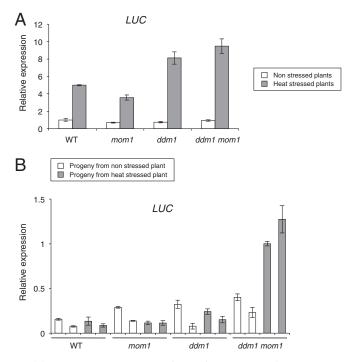


Fig. 54. Quantification of *LUC* expression. (A) Relative expression levels of *LUC* after heat stress (stressed generation) were determined by quantitative RT-PCR. Nonstressed plants (white bars) were grown at 21 °C and harvested 7 d after germination. Heat-stressed plants (gray bars) were harvested directly after heat stress (7 d at 21 °C followed by 6 °C for 24 h and then 37 °C for 24 h). Values were normalized to 18s ribosomal RNA. The mean of nonstressed WT was set to 1. (*B*) Relative expression levels of *LUC* of the progenies derived from nonstressed or heat-stressed parents. Plants were grown at 21 °C and harvested 7 d after germination. One Sample of stressed *ddm1 mom1* was set to 1. White and gray bars indicate the progeny of control plants and heat-stressed plants, respectively.

Experiment	Primer	Sequence (5′-3′)
Bisulphite sequencing	pUBQ3_98F	AGAGAAGAGAGAGAGTGTGAGATA
	pUBQ3_531R	RATCCAARTTTTTATTTCTTTTCTC
Quantitative RT-PCR	AT1G43880_F	GTTCCAGGTGGAGATCGAAA
	AT1G43880_R	TCCATGAACCCGATCTTCTC
	AT2G05564_F	CTTGCATGCGCAATTCTTTA
	AT2G05564_R	CCTCCGATTCCAAAGCATAA
	AT5G29560_F	GGAAAACGTTAACGGGACAA
	AT5G29560_R	CCATCCTGGTCAAAGAAAGC
	AT5G34790_F	GGAGGTTGAGGGAAGTTGGT
	AT5G34790_R	ACCGGAGGGCTTATTGTCTT
	AT2G12345_F	CATCACCTAAGGGGTCGAGA
	AT2G12345_R	CACTTCCTCCTCTTGGCTTG
	AT5G48850_F	GCCGAAGCGGTATACAGAAA
	AT5G48850_R	TTGATAAGGCACATCGCAAG
	LUC_F	CCTATGATTATGTCCGGTTATGTAAACA
	LUC_R	TGTAGCCATCCATCCTTGTCAA
	185_F	CGTCCCTGCCCTTTGTACAC
	185_R	CGAACACTTCACCGGATCATT