

S1 Text

S1 Text: Supplemental Materials and Methods

Arabidopsis mutants

The mutants used for this study were obtained from the Arabidopsis Biological Resource Center (ABRC) [60], Ohio State University, unless otherwise stated.

ago4: CS9927

ago6: CS66096

ago4; ago6: CS66095

cmt2: CS849188

cmt3: CS3665

dcl3: CS16390

ddm1: *ddm1-5* [61]

dms3: SALK_068723C

drm1; drm2: CS6366

hda6: CS66153 (*axe1-5*)

ibm1: SALK_035608C

kyp: SALK_044606C

met1: *met1-6* [50]

nrpd1a: SALK_128428

nrpe1: SALK_029919C

rdr2-1: CS66076

rdr6: CS24285

ros1-2: Obtained from Jian-Kang Zhu [32]

ros1-7: Obtained from the TILLING project [33]

shh1: SALK_074540C

spt5l: SALK_001254C

vim1; vim2; vim3: Obtained from Eric Richards [62]

mop1-1 (maize): Obtained from Nathan Springer [63]

Primers used in this study (5'→3')

RT-qPCR:

ROS1 F: CAGGCTTGCTTTTGGAAAGGGTACG

ROS1 R: GTGCTCTCTCACTCTTAACCATAAGCT

DML2 F: CGGGAAGAGGAATCACAGACT

DML2 R: GGACGTCGATAGGGTTTATGCT

DML3 F: CGTAGGGAGTTGTGTAAGGGA

DML3 R: GCAAAGTTCAATCCGTCTTGTGT

IBM1 F: TGCTGTCCTGTGTCTCAGGTTG

IBM1 R: ACCGCGTCAGATAGAAGTTCTGG

AT1G58050 F: CCATTCTACTTTTTGGCGGCT

AT1G58050 R: TCAATGGTAACTGATCCACTCTGATG

AIROS1a/b F: TTGCTATTTGGACGCCAGGTGAG

AIROS1a R: ATACACTTACTTACAGCCGGTTG

AIROS1b R: ATACACTTGCTCACAGTTGGTTG

AI315392* F: CCATTCTACTTTTTGGCGGCT

AI315392* R: TCAATGGTACTGATCCACTCTGATG

**A. lyrata* homolog to AT1G58050

DNG101 F: CCAGATGATCCCTGTCCATATCTTC

DNG101 R: GGCATCGATCGATTGTGCAGTTTC

DNG103 F: CCATGCTGTGACCCTCAAATG

DNG103 R: CTCTGCAGTACAATTGTGGCAC

ZmEF1α F: TGGGCCTACTGGTCTTACTACTGA

ZmEF1α R: ACATACCCACGCTTCAGATCCT

Bisulfite Sequencing:

AtROS1 5' end top strand fragment 1a F: GAYTAAAYATTTGGAATGATYAAAAAYGAAAG

AtROS1 5' end top strand fragment 1a R: TTGTTTTCTACAAAATCTCCTARACTAT

AtROS1 5' end bottom strand fragment 1b F: CAACTARCCTAATAATCACTCTACTACACT
AtROS1 5' end bottom strand fragment 1b R: TAGAYTATGGGAAAGATGATTTAAAAAG
AtROS1 5' end top strand fragment 1c F: GGAGATTTTGTAGAAAAGAATYATT
AtROS1 5' end top strand fragment 1c R: TCACTRATRCTTCRTTTTCTTCTCTT
AtROS1 5' end bottom strand fragment 1d F: CTTTTTAAATCATCTTTCCCATARTCTA
AtROS1 5' end bottom strand fragment 1d R: GTAGAATYAATGGTTATGGTGGTG
AtROS1 coding region fragment 2a F: CACAAACCTTTCCTCCAATTRACTRCTAT
AtROS1 coding region fragment 2a R: GATTYYAAGAGAAGAAAYGAAGYATYAGTG
AtROS1 coding region fragment 2b F: CACAAACCTTTCCTCCAATTRACTRCTAT
AtROS1 coding region fragment 2b R: GATYTGYYYATAYAYGGTGGAGGAT
AtROS1 coding region fragment 3 F: CATCCRCRACTCTTRATTRTTTCARCAAC
AtROS1 coding region fragment 3 R: GAGYAGGATYAAGYTYAGAGATYGAYTTAG
AtROS1 coding region fragment 4 F: CRCCTCCTCTATRTCARCTATTRATACTTC
AtROS1 coding region fragment 4 R: GYYAGTGYGTTTGYAAGGTGYTAYAAAYATG
AtROS1 coding region fragment 5a F: TTGTGGYAGTTGGAAAAGAGAGAAYYTG
AtROS1 coding region fragment 5a R: CTTACCTCATTTACTTRAAARTACRTTCC
AtROS1 coding region fragment 5b F: GGAAYGTAYTTTTYAAGTAAATGAGGTAAG
AtROS1 coding region fragment 5b R: CCACRTACACATACRTACCCTACATA
AIROS1a 5' end top strand F: TGTTAAAGAAAAGGATAGAAYATGTGTG
AIROS1a 5' end top strand R: CCTAATAATCACCCCTATAACTTCCT
AIROS1a 5' end bottom strand F: TCTTTCTCTAACTTTCATARCCRTTT
AIROS1a 5' end bottom strand R: AAGAATTGTAAGGGGAYTAGYYTAAT
AIROS1a exons 19-20 F: TTGYTAGTGYGTTTGYAAGGTGYTA
AIROS1a exons 19-20 R: CATCCTCTATRTCARCTATTRATACTT
AIROS1b exons 18-19 F: GTATGTGAAGTAAYTGGATAAGGAYAYATG
AIROS1b exons 18-19 R: CTTACCTCATTTACTTRAAARTACRTTCC

5' RACE:

ROS1 cDNA synthesis primer: CTCACAGTCACCCGCGTATCA

ROS1 RACE outer nested PCR: GACTGCTATGATATTGATCCTCCAC

ROS1 RACE inner nested PCR: GCTTTCTTCTCTCCTCTGTTTCTCCAT

Transgene construction:

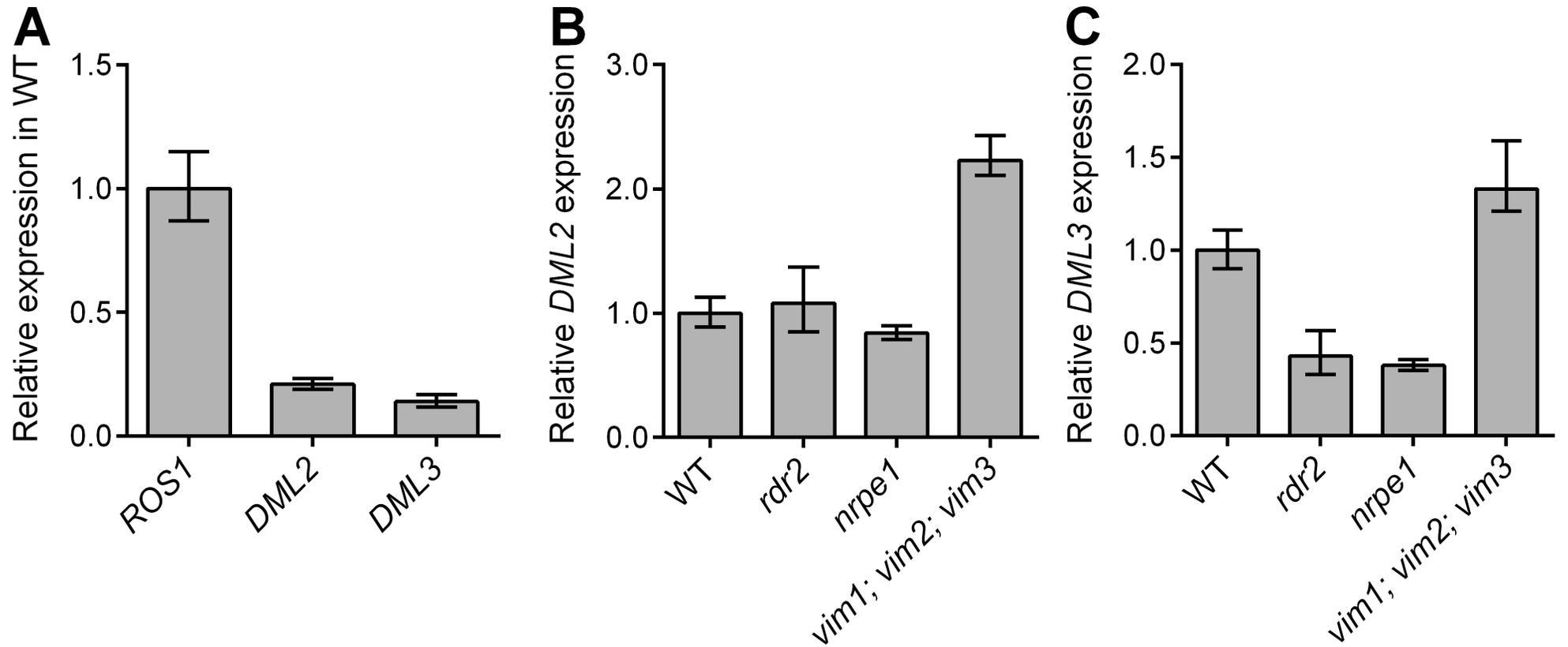
Inverted repeat F: CACCGTTAGTTCATATAATTTTAAATAGTTACGT

Inverted repeat R: AGGGCGAAAGTTCGTTTGGTTG

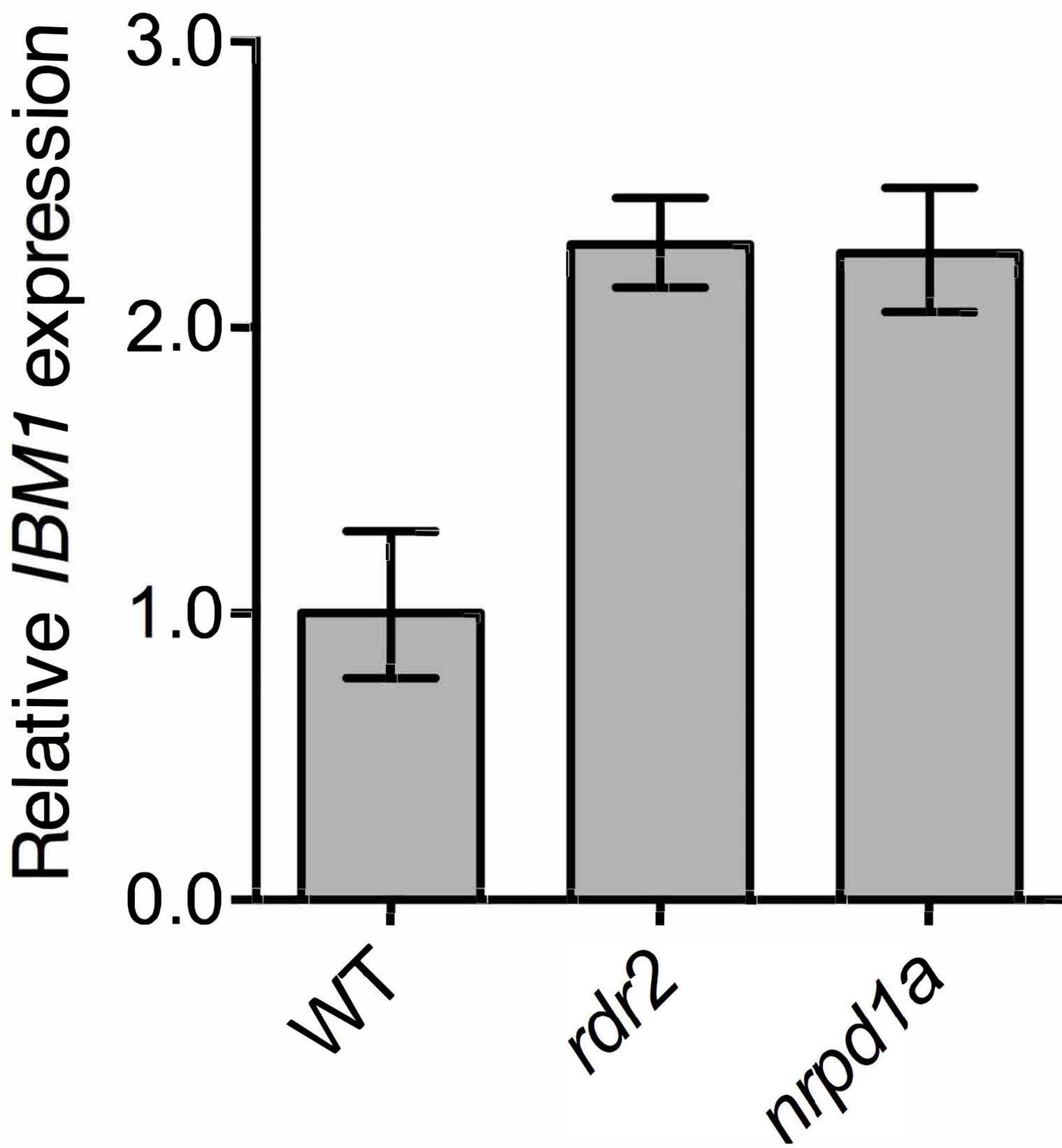
Supplemental References

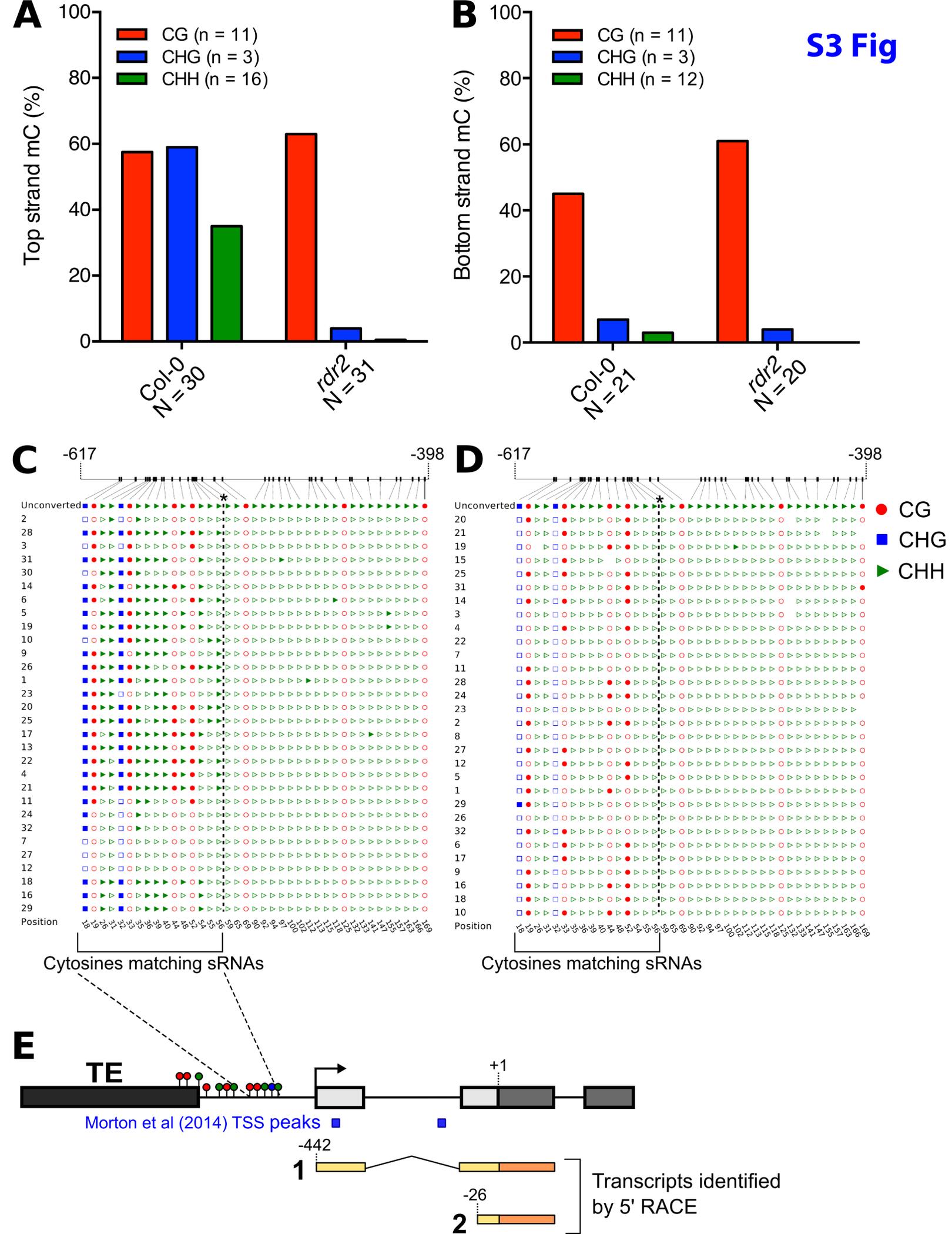
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61. Jeddelloh JA, Stokes TL, Richards EJ. Maintenance of genomic methylation requires a SWI2/SNF2-like protein. *Nat Genet*. 1999;22: 94–97. doi:10.1038/8803.
62. Woo HR, Dittmer TA, Richards EJ. Three SRA-Domain Methylcytosine-Binding Proteins Cooperate to Maintain Global CpG Methylation and Epigenetic Silencing in *Arabidopsis*. *PLoS Genet*. 2008;4: e1000156. doi:10.1371/journal.pgen.1000156.
63. Alleman M, Sidorenko L, McGinnis K, Seshadri V, Dorweiler JE, et al. An RNA-dependent RNA polymerase is required for paramutation in maize. *Nature*. 2006;442: 295–298. doi:10.1038/nature04884.

S1 Fig

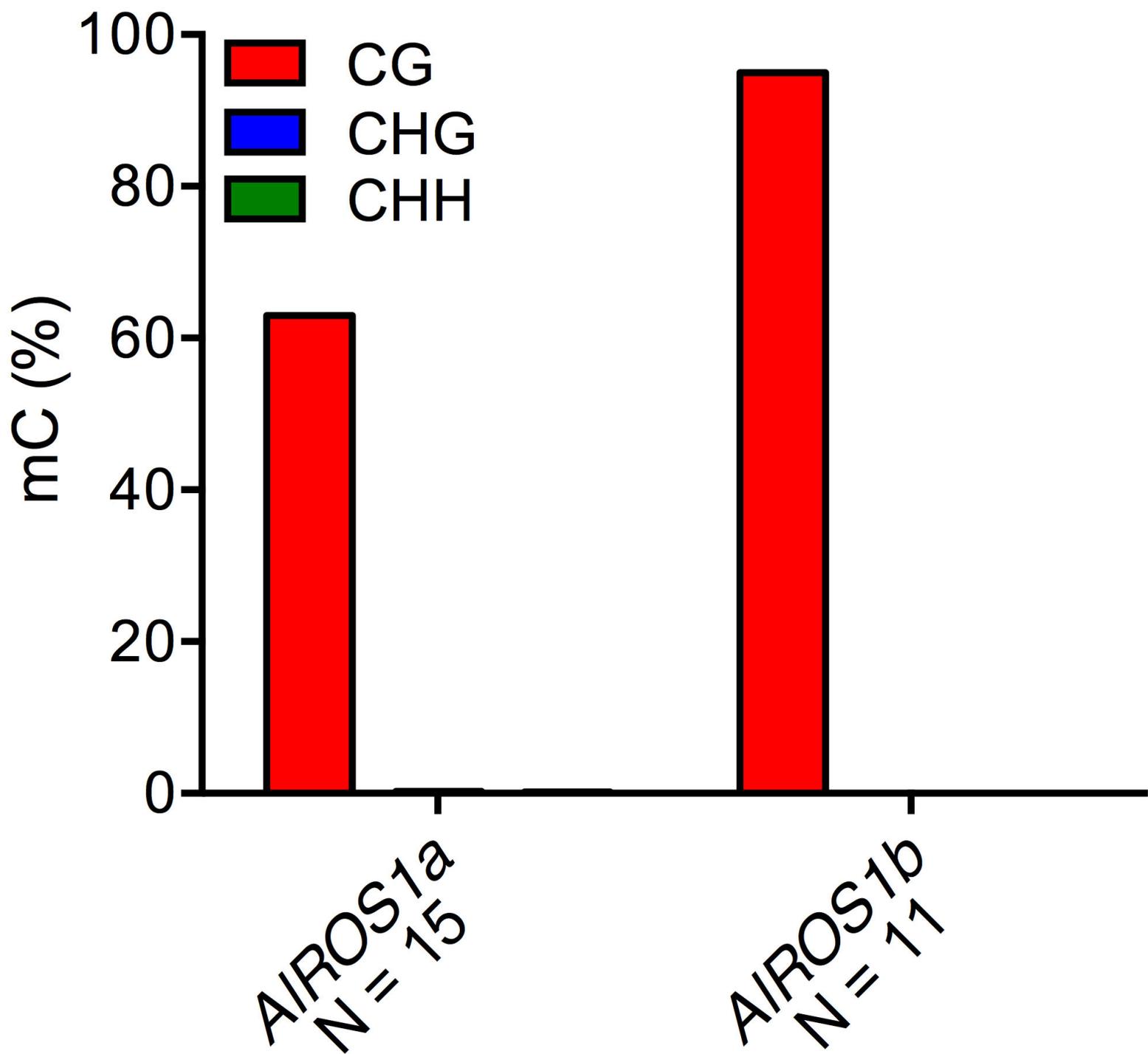


S2 Fig

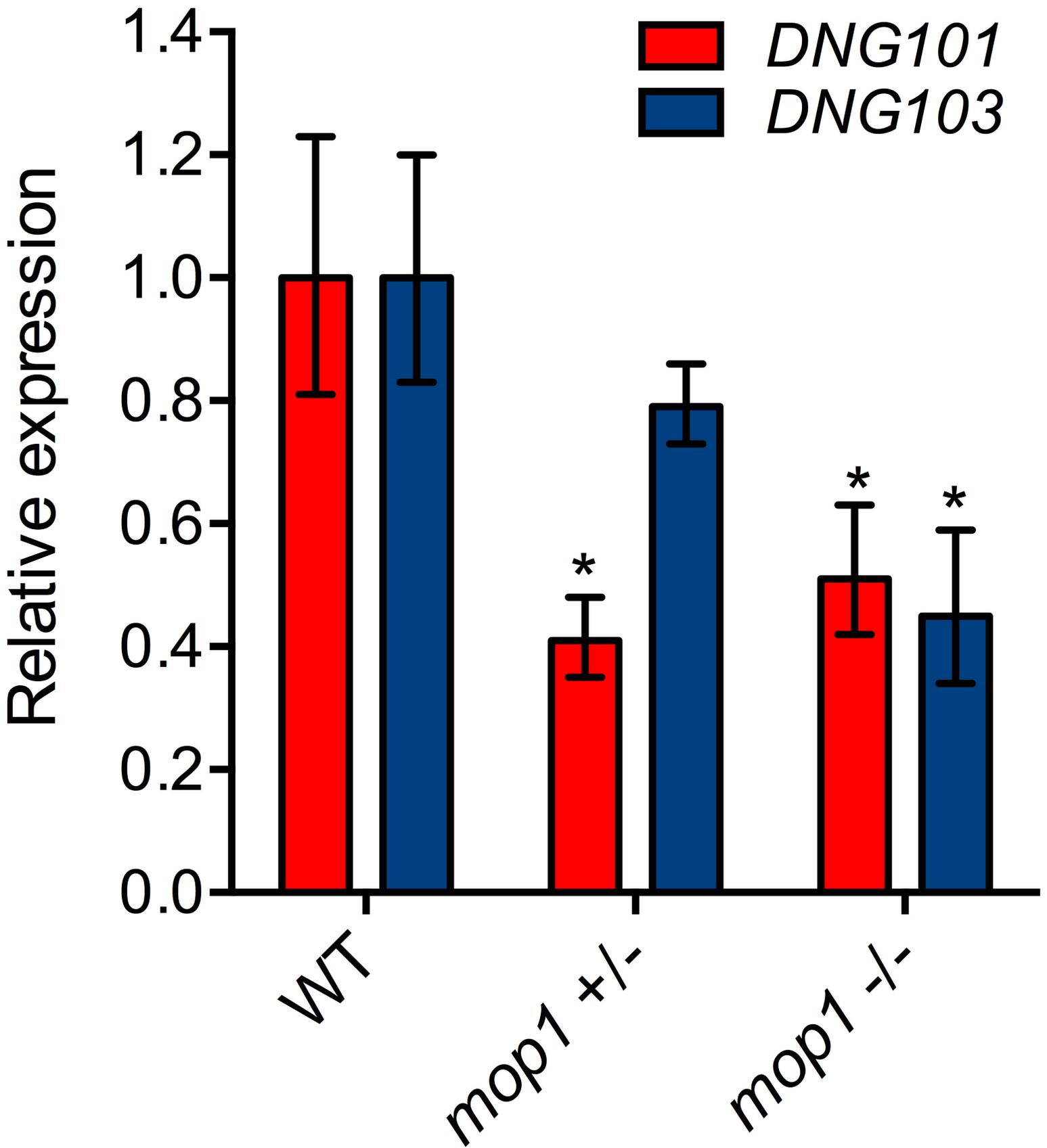




S4 Fig



S5 Fig



S6 Fig

