

Supplemental Figures

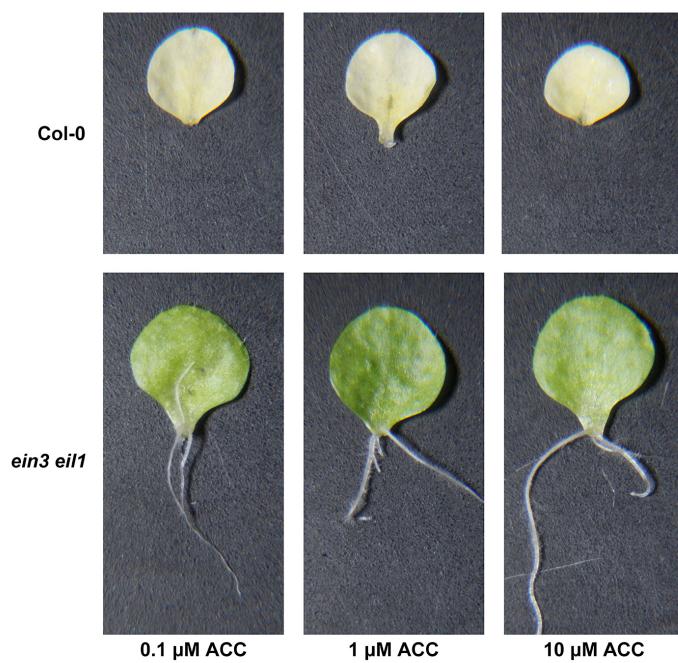


Fig. S1: *ein3 eil1* mutant shows higher DNRR capability than Col-0

Representative images showing leaf explants detached from 12-day-old Col-0 or *ein3 eil1* cultured on B5 medium containing different concentrations of ACC for 12 days.

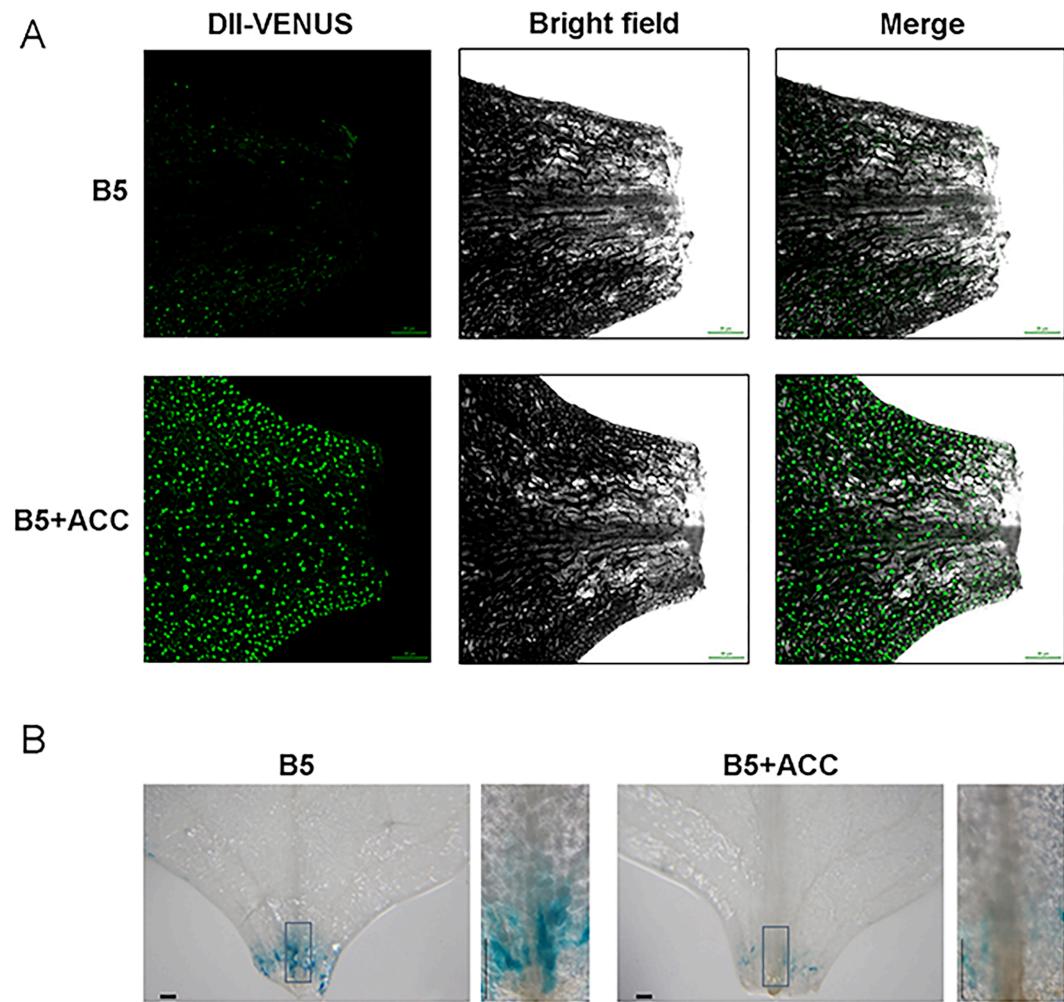


Fig. S2: Ethylene treatment attenuates auxin accumulation at the cutting site

- (A) VENUS fluorescence in 4-DAC leaf explants (DII-VENUS) cultured on B5 medium or B5 medium containing 10 μ M ACC (B5+ACC). Bar=20 μ m.
- (B) GUS staining of 4-DAC leaf explants detached from 12-day-old *DR5:GUS* plants cultured on B5 medium or B5 medium containing 10 μ M ACC (B5+ACC). Close-up views were displayed on the right. Bar=0.1 mm.

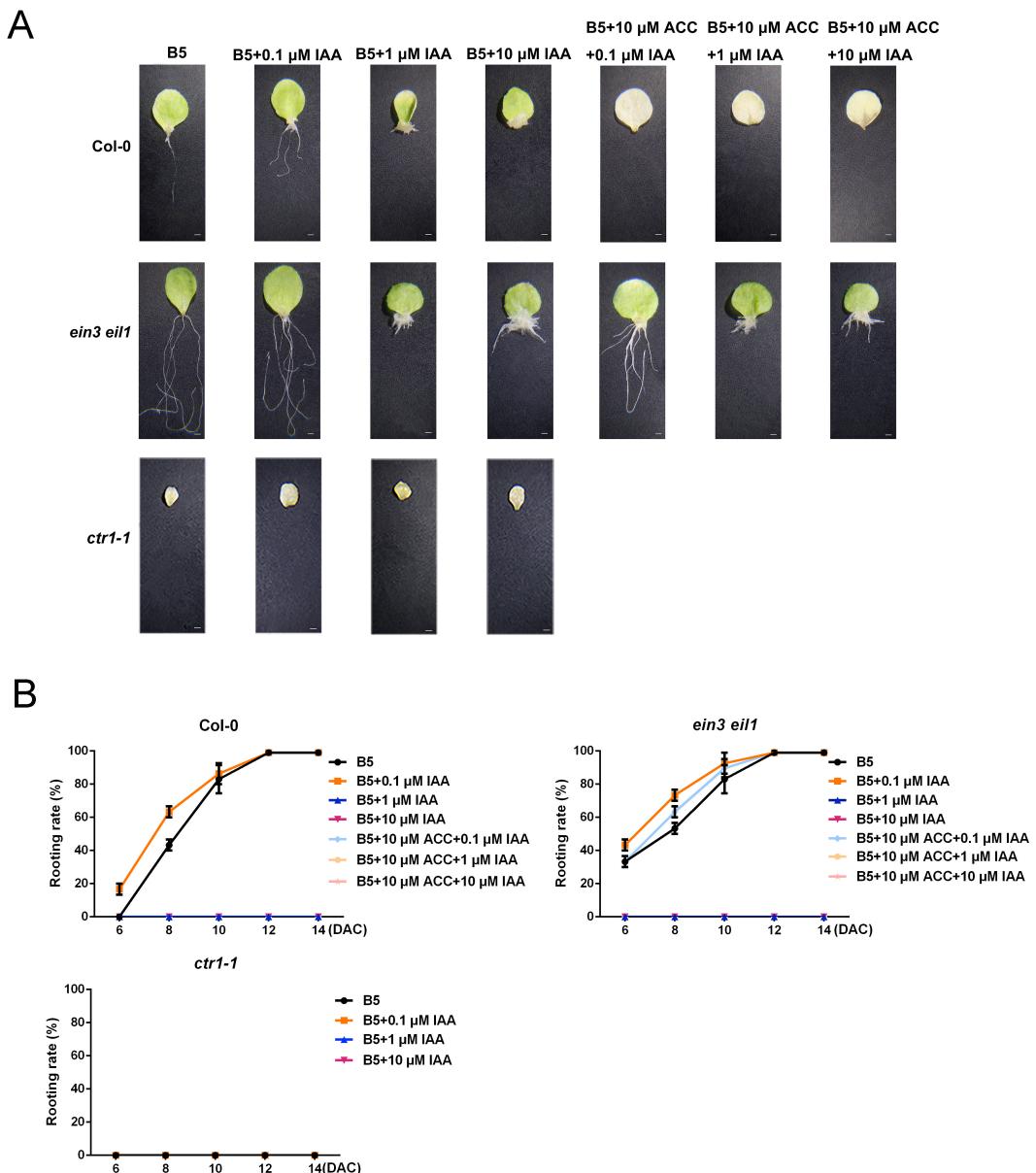


Fig. S3: Auxin supplement could not rescue the ethylene-triggered rooting defect

(A) Representative rooting phenotypes of the 12-DAC leaf explants from 12-day-old Col-0, *ein3 eill* or *ctr1-1* cultured on B5 medium, B5 medium plus indicated concentrations of IAA, or B5 medium plus indicated concentrations of IAA with additional 10 µM of ACC. Bar=1 mm.

(B) Quantitative rooting rates of leaf explants from 12-day-old Col-0, *ein3* *eil1* and *ctr1-1* on the indicated growth conditions as described in **(A)**. Mean \pm SD, $n = 3$.

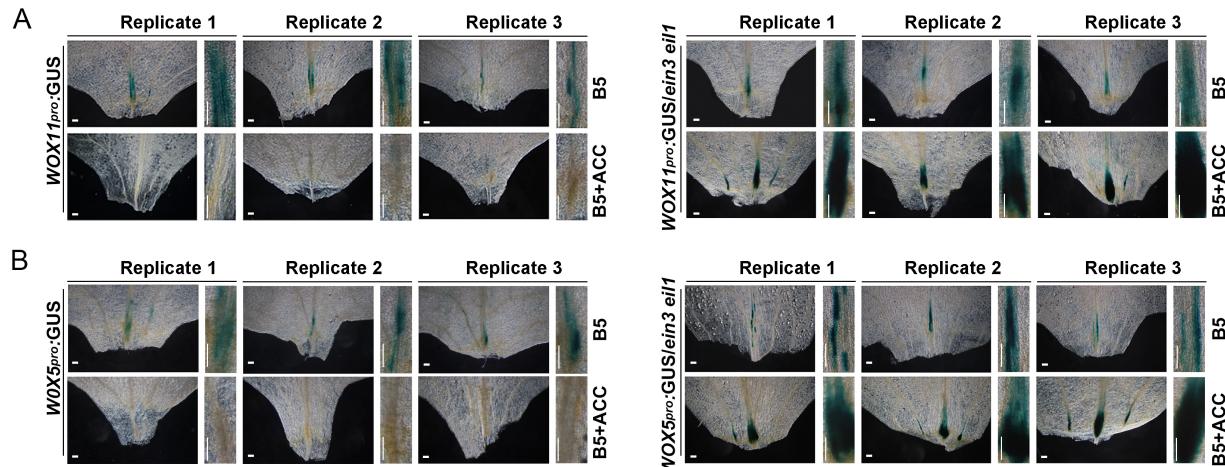


Fig. S4: GUS reporter assay showing *WOX11* or *WOX5* expression levels

GUS staining showing the expression patterns of *WOX11* (**A**) and *WOX5* (**B**) in Col-0 or *ein3 eil1* background grown on B5 or B5 with 10 µM ACC medium. The plants were germinated and grown on 1/2 MS medium for 12 days. The first pair true leaves were detached and cultured on B5 medium or B5 medium containing 10 µM ACC for 4 days. Close-up view was shown on the right. Three arbitrarily selected images were shown as replicates (replicate 1/2/3) for each treatment. Bar= 0.1 mm.

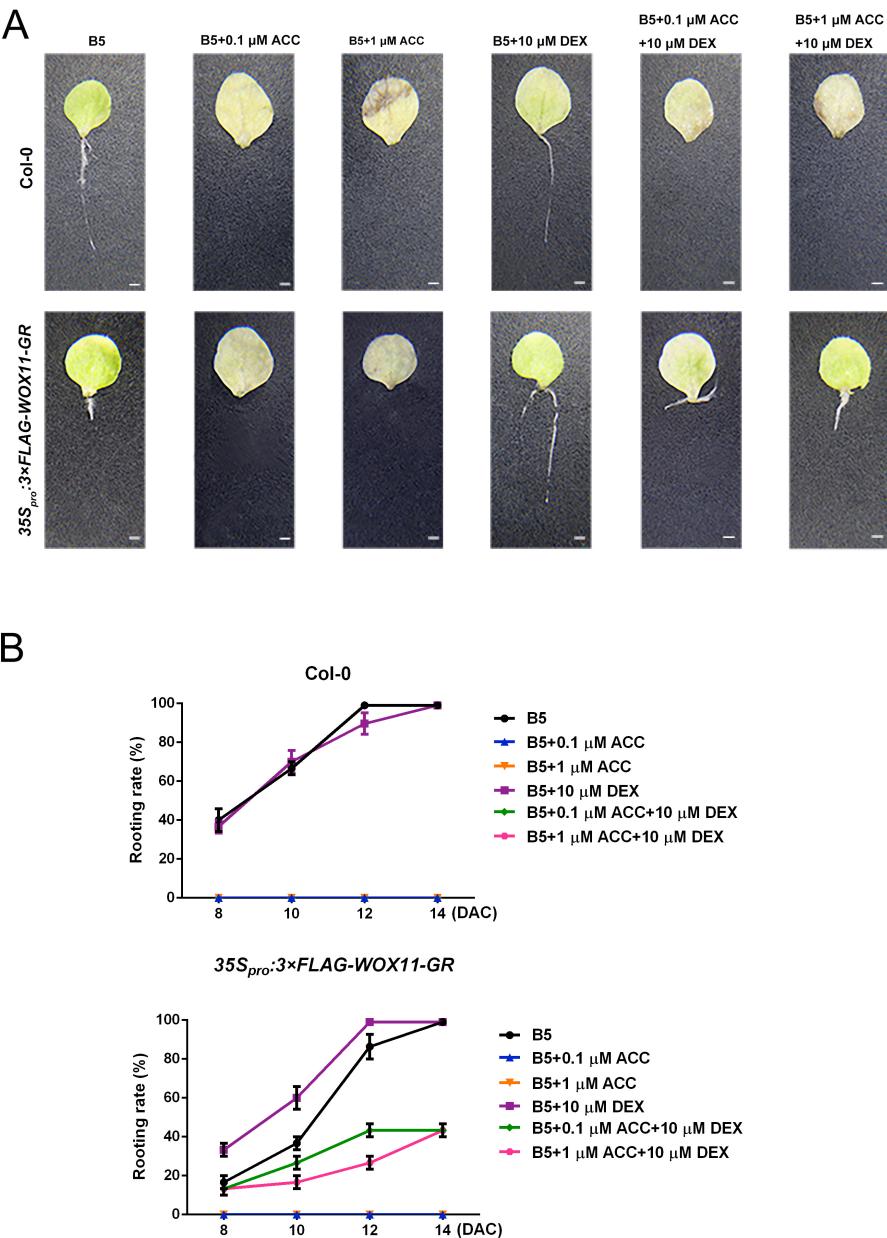


Fig. S5: Inducible activation of *WOX11* rescues the EIN3-triggered DNRR decrease

(A) Representative rooting phenotypes of the 12-DAC leaf explants from 12-day-old Col-0 and *35S_{pro}:3×FLAG-WOX11-GR* cultured on B5 medium, B5 medium containing indicated concentrations of ACC, or B5 medium containing 10 μM DEX plus indicated concentrations of ACC. Bar= 1 mm.

(B) Quantitative rooting rates of leaf explants from 12-day-old Col-0 and *35S_{pro}:3×FLAG-WOX11-GR* on the indicated growth conditions as described in (A).

Mean ± SD, $n = 3$.

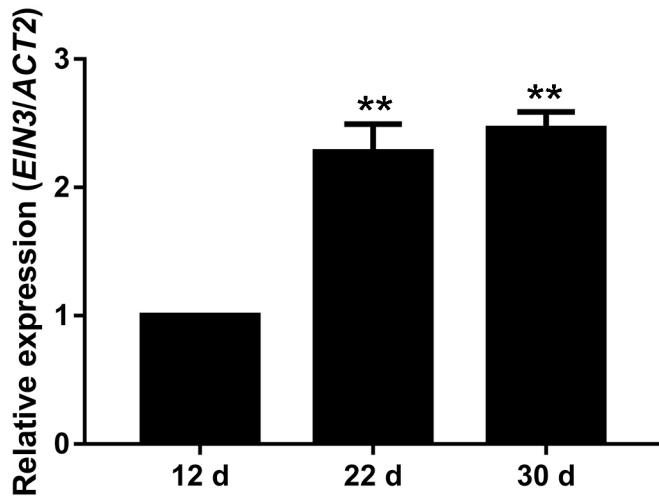


Fig. S6: Plant age induces *EIN3* transcription

Leaf explants were detached from 12, 22 or 30-day-old Col-0 plants and then cultured on B5 medium for 2 days. The endogenous *EIN3* transcription was detected by qRT-PCR analysis. Mean \pm SD, $n = 3$. Student's *t* test (** $P < 0.01$) was used to analyze statistical significance.

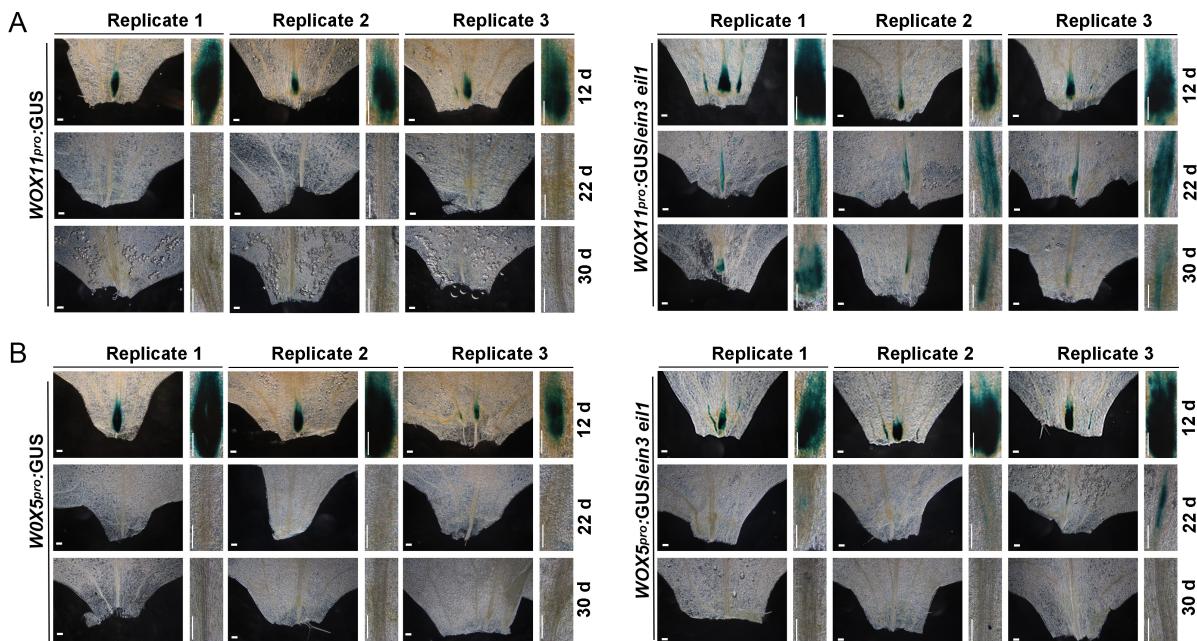


Fig. S7: GUS reporter assay

GUS staining of *WOX11pro:GUS* (**A**) and *WOX5pro:GUS* (**B**) in 12, 22, or 30-day-old Col-0 or *ein3 eill* plants. After grown on 1/2 MS medium for 12, 22, or 30 days, the first pair true leaves of indicated genotype were cultured on B5 medium for 4 days. Close-up view of each boxed region is shown on the right. Three arbitrarily selected images were shown as replicates (replicate 1/2/3) for each treatment. Bar= 1 mm.

Table S1. List of primers used in this study

Primers used for DNA constructs:	
BamH1-EIN3-141	CGCGGATCCCCAAGGTTAGGTTGATCGTAATG
Xho1-EIN3-352	CCGCTCGAGTGAAGAATTCTAACTTTTC
Primers used for qRT-PCR:	
WOX11-qRT-F	AGTGGCATGGAGAACATCTC
WOX11-qRT-R	CTCGTCACCTCTGTCGGAAC
WOX5-qRT-F	GGCTAGGGAGAGGCAGAAC
WOX5-qRT-R	GTCCACCTGGAGTTGGAG
ACT2-qRT-F	GTGGATTCCAGCAGCTTCCAT
ACT2-qRT-R	GCTGAGAGATTCAAGATGCCA
EIN3-qRT-F	CTGCAGATCACAAACAACTTGA
EIN3-qRT-R	CATCCATCGTCCTACTACTCC
Primers used for ChIP-PCR:	
WOX11 A-F	GTTGGCAACAAACGTTGGAG
WOX11 A-R	GCGGTAACGGGTACAACAC
WOX11 B-F	TGTGTTGTACCCGTTACC
WOX11 B-R	CAGTATCCCTTATCCGCTTG
WOX11 C-F	GCAACTTCCACTCGTTGTG
WOX11 C-R	GTGAGAGGTGGTGAGTTGAG
WOX5 A-F	CTTGCCGACCAACGTTCCCTC
WOX5 A-R	CGGATGGATGGCCGATATTAG
WOX5 B-F	GTGTGTGCGAGTCACCAC
WOX5 B-R	GATCTCGCATTCAATGCCATG
WOX5 C-F	GATCAGTCTCTCCAAATC
WOX5 C-R	TACGTTTAGGGCCTGTG
PORB C-F	GAATAAGGTTGAGCTATTCTCGTGAATG
PORB C-R	CTCATGTTGGATAAGTTCTCCAGTA

Probe sequence for EMSA :

WOX11-EBS1	ACGGATTCAAAAGATTGTGTAGCTAATTTGTG
WOX11-EBS2	CATACATATATATATGTTGATTACCCATGCAT
WOX5-EBS1	ATTCAATGTTCAATCGCTGGTCCGATATAACAAC TTATGCAT
WOX5-EBS2	CCCGACATTCATCAATTCAATTCTCTTTTATT