

Table S1. Seed development in the wild-type and *eda3* mutant plants.

	Aberrant seeds		Total seeds	Percentage of aberrant seeds
	Undeveloped ovules	Aborted seeds		
wild type	11	4	962	1.6%
<i>eda3</i>	363	79	998	44.3%

Table S2. Primers used in this study.

Primer name	Sequence (5'-3')
For qRT-PCR	
EDA3-QF	CTTCCTCAGAGACTACCCACAAAG
EDA3-QR	GAACCTCCTGGTTCTTGTCTAAAGC
ACT2-QF	CCAACATATGCATCCTCTGGTCATCCCA
ACT2-QR	TGGCTGAGGCTGATGATATTCAACCAATCG
For expressing EDA3-EYFP	
EDA3-HF	TCGAATT CCTGCAGCCC GGATGGCGGCATCATCATCTCATCTCT
EDA3-ER	CCCTTGCTCACCA ACTAGTTGAATCAGGAAGAAGCCGACCATTG
For expressing EDA3ΔcTP-EYFP	
EDA3-TrunF	TCGAATT CCTGCAGCCC GGATGGCAGCTTAATTAGCAATTCTT
For expressing PIP2A-mCherry	
PIP2A-HF	TCGAATT CCTGCAGCCC GGATGGCAAAGGATGTGGAAGCCGTT
PIP2A-ER	CCCTTGCTCACCA ACTAGTGACGTTGGCAGCACTCTGAATGAT
For expressing PIP2A fused with the NLS of EDA3 and mCherry	
NLS-PIP2A-EYFP-F1	CTTCTTAGAAGGCCTGGTGCTCGTGAGCTAGCAAAGGATGTGGAAGCCGT
NLS-PIP2A-EYFP-F2	TTAGGTACAGGTTACCAAACAACAAAGGCCTTCTAGAAGGCCTGGTGC
NLS-PIP2A-EYFP-F3	GGTCGAGGTAAGCTGTTGTCCGGTCTGTTAGGTACAGGTTACCAAA
NLS-PIP2A-EYFP-F4	TCGAATT CCTGCAGCCC GGATGGGTCGAGGTAAGCTGTTGTC

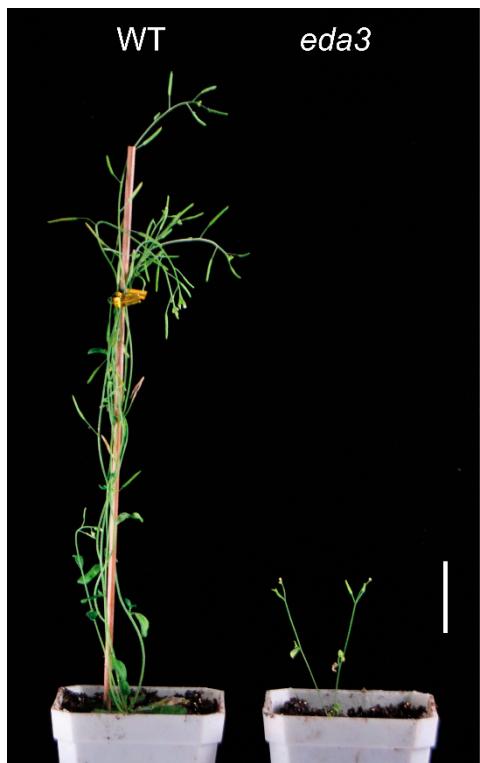


Figure S1. The *eda3* mutant shows a retarded growth phenotype under normal conditions.

Bar = 3 cm.

MAASSSHLFALPSPASPFLSAPNRNRVRLAKSCPENQSFDSDSSSE	50
<u>TTIKAQGDQKSVSRRQWMTACVCASAALISNSYTFVSVQSAAALDKKPGG</u>	100
SCRNCQGSGAVLCDMCGGTGKWKALNRKRAKDVEFTECPNCYGRGKLVC	150
PVCLGT GLPNNKGLLRRPGA RELLEKMYNGRLLPDS	186

Figure S2. Deduced amino acid sequence of EDA3.

Predicted chloroplast transit peptide is underlined. The nuclear localization signal is in italic. The peptide used as the antigen for raising antibody against EDA3 is in boldface.

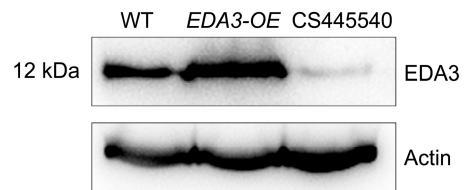


Figure S3. Validation of the antibody against EDA3.

Seedlings of the wild-type (WT), *EDA3*-overexpression (*EDA3-OE*), and the T-DNA insertion mutant (CS445540) were grown under normal conditions. Leaves from different lines were harvested and used for immunoblot analysis using the antibody we raised against EDA3. Actin was probed as a reference.

>EDA3 (AT2G34860)

MAASSSHLFALPSPASPFLSAPNRNRVRLAKSCPENQSFDSNDSSE
TTHKAQGDQKSVSRRQWMTACVCASAALISNSYTFVSVQSAAALDKKPGG
SCRNCQGSGAVLCDMCGGTGKWKALNRKRAKD**VYEFTEC**PNCYGRGKLVC
PVCLGTGLPNNKGLLRPGARELLEKMYNGRLLPDS

>ORANGE (AT5G61670)

MSSLGRILSVSYPPDPYTWRFSQYKLSSSLGRNRRLWRFTALDPESSL
DSESSADKFASGFCIIEGPETVQDFAKMQLQEIQDNIRSRRNKIFLHMEE
VRRLRIQQRIKNTELGIINNEEQEHELPNFPSFIPFLPPLTAANLKVVYAT
CFSLIAGIILFGGLLAPTLELKLGIGGTSYADFIQSLHLPMQLSQVDPIV
ASFSGGAVGVISALMVVEVNNVKQQEHKRCKYCLGTGYLACARCSSTGAL
VLTEPVSAIAGGNHSLSPPKTERCSNCGAGKVMCPTCLCTGMAMASEHD
PRIDPDFD

>TsiP1 (AAD18030)

MASSSTCTCSRPIITAKSNIINRFVTPRGIQLIFHGNPRLKQVPRIFAV
RASAVDSSSFVERMEKAWLISKQPRPIVCSTCGSNGHVECKWCSGTGFF
VLGDNMLCQVPSRNTSCCVICAGKGSVCCTDCKGTGHRAKWLGEPPLPNPP
IAKE

>ANGULATA7 (AT5G53860)

MSRGPGRLIQNVTQFADAQFKQFSTRYQQVIDILD**FPIKLV**SPFTLAF
DTAGSAPRGFGTPEFISKTSYLSVFAVATLGTYDTALDLGKKVTCQRDCK
TCNGWQALRCTMCKGTGSVHYQIKDYNLRSGEKPTADCVADAIVENRAEL
VHLPSFNHSAPLPSKDCPTCDGTGAMSCTECKNLQVRISADDIMEPPW
KAYNVLKKMDYPYEHIHSMKDPSIANFWLITLPQIVGGFDYDEDVKKKI
WWQYE~~NLLNPHLGWFCYTNIVSIPYLD~~RFLWNWRHLWDTDESMRYDQL
RDLVAKRNPGWEYLQDALVSIDPVRAREDPVIVKNVPYYKAKKSLEAEVT
KLNPPPRPQNWGELNLPLNISSWSEEDLKNPAKLYEKTVLLNAQREIADK
ILDAQWEAKWRQEKEVEMLEQKVRPYIQDSSMAVLPQPILLKSQKKAQKG
SRQRKWWFF

Figure S4. Sequences of EDA3, ORANGE, TsiP1, and ANGULATA 7.

Conserved cysteine-rich DnaJ-like zinc finger domains are underlined.