

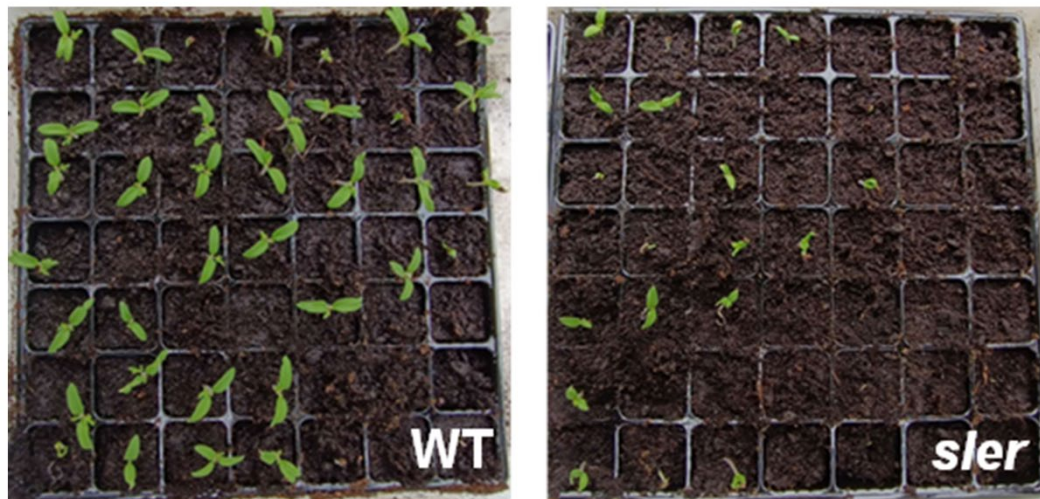
Supplementary Table 1. Primer list used in this research.

Target gene	Primer name	Sequence(5'-3')
For qPCR		
<i>SIUbiquitin</i>	SIUbiquitin-F	CACCAAGCCAAAGAAGATCA
	SIUbiquitin-R	TCAGCATTAGGGCACTCCTT
<i>SIYUC1</i>	YUC1-F	TGGACATTGGTGCAATTGGAA
	YUC1-R	AGCCAGTAGCAAGAAGAACAGA
<i>SIYUC3</i>	YUC3-F	TGGCCCTGTAATTGTTGGTG
	YUC3-R	GCCACAGTGATGCGATACAG
<i>SIYUC4</i>	YUC4-F	CGTCCCGACTCGGATTAGAT
	YUC4-R	GCGTTCCAACGTCAAGTACA
<i>SIYUC5</i>	YUC5-F	ATGGCTTGTGCTTGCTACTG
	YUC5-R	CAACCAACGACCACCACTTT
<i>SIYUC6</i>	YUC6-F	TGGCAACATTTGATAATCATGTAGA
	YUC6-R	TGCAGATGTAGCAAGACCAC
<i>SIYUC7</i>	YUC7-F	TGGAGAAATACAAGAAATTGATTG
	YUC7-R	AATCCAAGTGCATATAAACCAGC
<i>SIARF2A</i>	ARF2A-F	GTGTCGGAATAGTTGATGCTGATAC
	ARF2A-R	TACACCAGCTCACCCCTCTCGC
<i>SIARF2B</i>	ARF2B-F	GCTTGTGACAGTGCCATGTG
	ARF2B-R	TGCTGGTCTGAAGCTTGTT
<i>SIARF5</i>	ARF5-F	CCTCAGAGTTTGTCAATTCCT
	ARF5-R	AACATCATTCCAAATCTCATACC
<i>SIARF6A</i>	ARF6A-F	CCAACATATCCCTAGTACTTCAG
	ARF6A-R	GTGCCTGAGATATTAGTTGGT
<i>SIARF7</i>	ARF7-F	AGACGTTACTCGCTACA
	ARF7-R	ACTTCAGCGCAAGACA
<i>SIARF8B</i>	ARF8B-F	GTCAGTCCGTGATCATAGAG
	ARF8B-R	GGAATCCAAGCTACAATTTCC
<i>SIABI3</i>	ABI3-F	ATCCAAAAGCTGCCCCCTTT
	ABI3-R	TAGCACAAGTGCCCCAACCT
<i>SIABI5</i>	ABI5-F	GGGAAATGTTTCGTTGGAGA
	ABI5-R	TGTATGTTGCACCCGTTGTT
<i>SIER</i>	ER-F	ACAACAATTTATCAGGCGATG
	ER-R	CTAGAGAAATTATTGCCGGTT

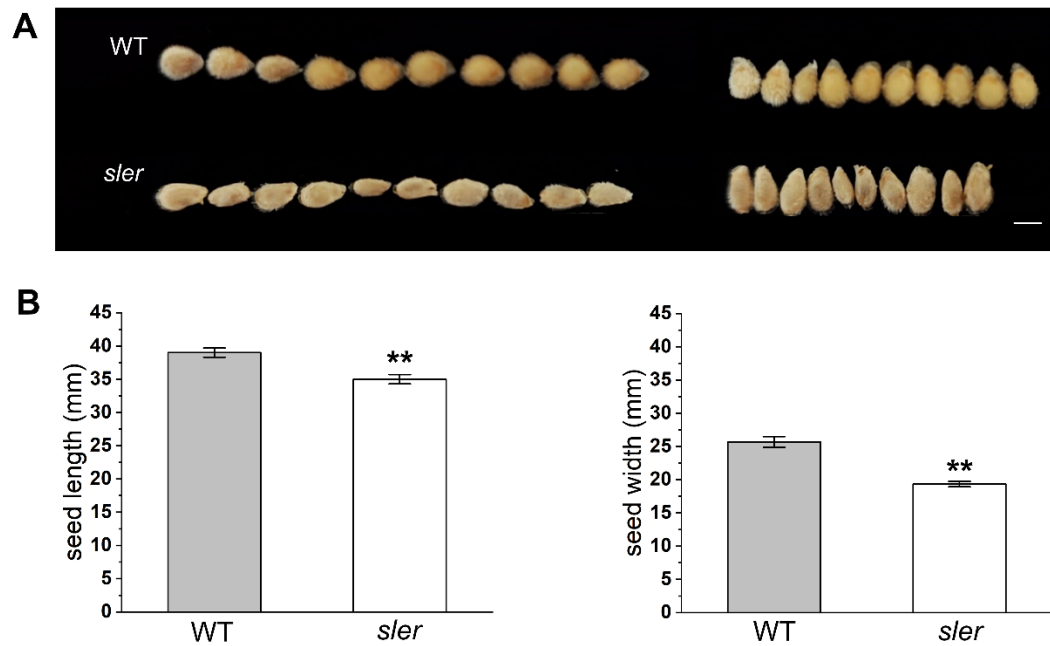
<i>SIERL1</i>	ERL1-F	GCAGTTAAGCGACTTTACACC
	ERL1-R	CAATCTTCAGACGTGTTTCCC
<i>SIIAA9</i>	IAA9-F	TAGATGCTTTACCTGATTACGACA
	IAA9-R	TGCAGACAAACTCCAATATCAAAC
For Sequencing		
<i>SIER</i>	ER436-R	AATGATGCCATGGTAGACTCA
	ER782-R	TACAACACATTCTCCACGTC
	ER1094-F	CACATTATAGACTATGCCTGT
	ER1384-R	CTAACAATCTCGGAAAGCA
	ER1750-F	TTTATTCATATAGGGGACTGC
	ER2402-F	GAGCTGCAATATGTTGAGTGG
	ER2726-F	CATTTGTTTGATTATTTAGCCTT
	ER3269-F	TTATCGAAGTTACCGTCCA
	ER3946-F	AATTTAAGGAGCATCATGGAG
	ER4438-F	ACAACAATTTATCAGGCGATG
	ER4719-F	CTTTTGCTATGTCTCCGAA
	ER5551-F	ATGGCACTTCATGTTTACGAG
	ER6006-F	TGTAGCCCTCGAATAATCCAC
	ER6401-F	TAACTAAGGCAGCAAACGA

Supplementary Table 2. Correspondence table of *YUC* and *FZY* genes analyzed in this research.

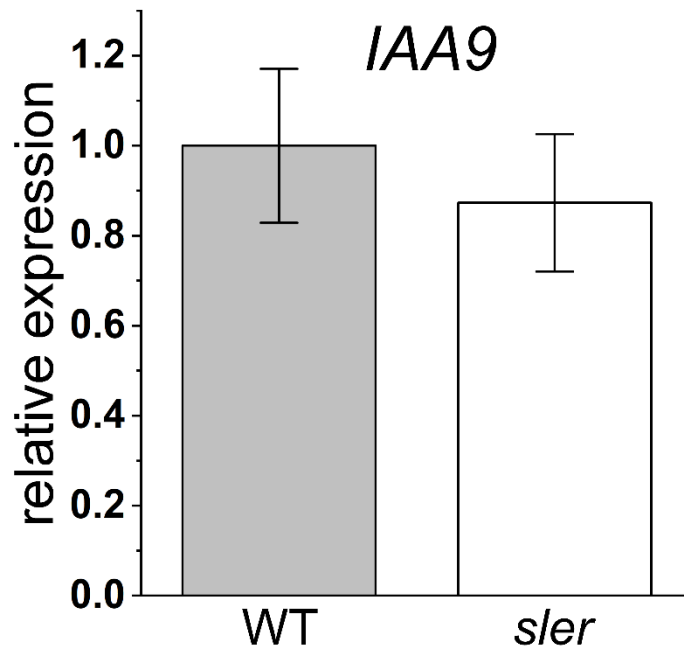
<i>YUC</i>	gene ID	<i>FZY</i>
<i>YUC1</i>	Solyc06g008050	<i>FZY4</i>
<i>YUC2</i>	Solyc06g065630	<i>FZY1</i>
<i>YUC3</i>	Solyc06g083700	<i>FZY5</i>
<i>YUC4</i>	Solyc08g068160	<i>FZY2</i>
<i>YUC6</i>	Solyc09g074430	<i>FZY6</i>
<i>YUC7</i>	Solyc09g091090	<i>FZY3</i>



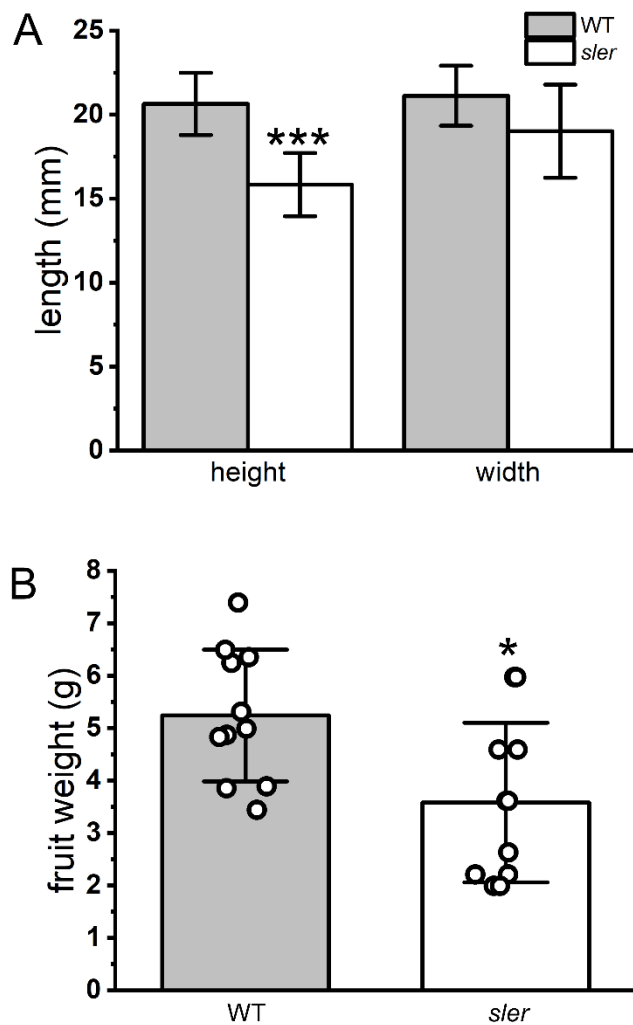
Supplementary Figure 1. The state of seed germination in the soil. The germination rates of WT and *sler* seeds were 75.5% and 38.8% respectively.



Supplementary Figure 2. Seed size of Micro-Tom WT and *slr*. Seed fullness of WT and *slr* (A), bar=2 mm. Seed length and width (B). Ten seeds were considered as one biological replicate. Error bars represent the standard deviations. Significant differences were determined by two-tailed Student's *t* test (**, 0.001<P < 0.01), n=3.



Supplementary Figure 3. Relative expression of *IAA9* between WT and *sler* ovary in DAF0. Error bars represent the standard deviations. Significant differences were determined by two-tailed Student's *t* test. *n*=3.



Supplementary Figure 4. Fruit size and weight of WT and *sler*. Fruit height and width of WT and *sler* (A). Fruit weight of WT and *sler* (B). Error bars represent the standard deviations. Significant differences were determined by two-tailed Student's *t* test(*, $P < 0.05$; ***, $P < 0.001$). $n=10$.