

Table S1 Primers used in this study

a. Primer pairs used for full-length CDS cloning (the restriction enzyme sites were used from pMD18-T vector (Takara))

Primers	Sequence (5' to 3')	Restriction enzyme
<i>RsETC1-F</i>	GCGGGTCGACGGTACC ATGGCTGACTTGGATCACTC	KpnI
<i>RsETC1-R</i>	TAGACATATGGGTACC TCATTCACTTGTGAGTATC	

b. Primer pairs used for genomic sequence cloning

Primers	Sequence (5' to 3')	Description
<i>RsETC1-gF</i>	ATGGCTGACTTGGATCACTCTTCTG	genomic sequence
<i>RsETC1-gR</i>	TCATTCACTTGTGAGTATCTTGAATTCCAGT	cloning

c. Primer pairs used for qRT-PCR, transgene verification and RT-PCR

Primers	Sequence (5' to 3')	Description
<i>GL1-qF</i>	GCAGCAGCCACTACCTGATTC	qRT-PCR
<i>GL1-qR</i>	CCAACACCACTATCTCGACTGATC	
<i>GL2-qF</i>	TAGCAATGGCGAAGGAGACAATAG	qRT-PCR
<i>GL2-qR</i>	CACCAAGGACGCATCAATGTTATC	
<i>GL3-qF</i>	AGAGCTGGCAGTATATGGATGATG	qRT-PCR
<i>GL3-qR</i>	TCACCGTTAGGACCGGAGAC	
<i>TTGL1-qF</i>	CACGCAATGGCATTCACTC	qRT-PCR
<i>TTGL1-qR</i>	ATGGCGACGATTCTGATGGATAG	
<i>PDF2-qF</i>	ACATGCTGCTTACAGTACCTCAC	qRT-PCR
<i>PDF2-qR</i>	AGACTCTGGATGTGCTATCAACTG	
<i>PDF2-like-qF</i>	ATTGACTGTGGATGGAACAACCTGG	qRT-PCR
<i>PDF2-like-qR</i>	TCTCCCCCTCATATCTGAGACCA	
<i>ETC1-qF</i>	TTCTTGCTCTAACCGAGACTTGAG	qRT-PCR
<i>ETC1-qR</i>	GGAAGATCAGCAGAGGAGATTGAG	
<i>ETC3-qF</i>	ATTGACTGTGGATGGAACAACCTGG	qRT-PCR
<i>ETC3-qR</i>	TCTCCCCCTCATATCTGAGACCA	
<i>CPC-qF</i>	GTACAAGCTCGTCGGAGACAG	qRT-PCR
<i>CPC-qR</i>	ACTTCTCCTGCTCTGTTCTTCTTC	
<i>RsETC1-qF</i>	TTCTTGCTCTAACCGAGACTTGAG	qRT-PCR and
<i>RsETC1-qR</i>	GGAAGATCAGCAGAGGAGATTGAG	transgene RT-PCR
<i>RsUBQ-qF</i>	ATGCAGATYTTTGTGAAGAC	qRT-PCR and
<i>RsUBQ-qR</i>	ACCACCACGRAGACGGAG	RT-PCR control

d. DEGs and primers used for qRT-PCR validation of the transcriptomes

Primers	Sequence (5' to 3')	Description
RchiOBHm_Ch4g0434171	AGACCAGCTTGGGGTTTGTGA TGCCGTTCCCGTGATCATCA	qRT-PCR
RchiOBHm_Ch2g0099441	GTGCGGAAGTTGCTGTAACAAGTG GGGTTTGGTTGTGGGTGGTGAG	qRT-PCR
RchiOBHm_Ch4g0395141	AAGGCACCTGCTTTGGAACACTC CTAAGATGCTCCCTCCTTGAAGAAACC	qRT-PCR

RchiOBHm_Ch7g0183231	TGGCATCTGGGTCTCAATTGTTCTTC CTGGCTGACGATCATTACTGGTACTAC	qRT-PCR
RchiOBHm_Ch1g0369821	CATGACCAGTGAGGCATACAAGGAC TCAGCAAATGTTTCGGCGTTCAAATC	qRT-PCR
RchiOBHm_Ch1g0345621	TGGCGGTTACTCTGACATTATGGTTG CACATAGGAGAGGAGCAGCACAATC	qRT-PCR
RchiOBHm_Ch7g0211941	AGCAAGAGATTTGAAGAGAGGCACAG GCAGCAATGGTGGTTGGGTTATTAC	qRT-PCR
RchiOBHm_Ch3g0457051	AGGCTCTTGGCTTGGTTGAATCTG CACCTTCGCAGACTTGTCCATCC	qRT-PCR
RchiOBHm_Ch6g0291431	TCAAGATATGACTGCTGCTTTCTCTGG ACCTCCTCCACCATTCCGTTCTC	qRT-PCR
RchiOBHm_Ch1g0355211	GAAGGCGAGTCAACGGACCAAC AAGCAAGTAATACCACTCCGCATCTG	qRT-PCR

e. Primer pairs used for subcellular localization

Primers	Sequence (5' to 3')	Restriction enzyme
<i>RsETC1-slF</i>	cagtGGTCTCacaacatggctgacttggatcactc	Eco31I
<i>RsETC1-slR</i>	cagtGGTCTCatacattcacttggtagtatcttg	BamHI

f. Primer pairs used for qRT-PCR in transgenic Arabidopsis.

Primers	Sequence (5' to 3')	Description
<i>AtTCL1-qF</i>	ATGGATAACACAAACCGTCTTCG	Semiquantitative RT-PCR
<i>AtTCL1-qR</i>	AAATCCCACCTGTCGCCAA	and qRT-PCR
<i>AtTCL2-qF</i>	GCAGAGGTAAATAGTGTGAAATGGG	Semiquantitative RT-PCR
<i>AtTCL2-qR</i>	CTGGTCCTGAGAGTATTGGGCA	and qRT-PCR
<i>AtETC1-qF</i>	CCAACCATTGTTGCCTCTTC	Semiquantitative RT-PCR
<i>AtETC1-qR</i>	TCATCACCCAAAACCTCTCA	and qRT-PCR
<i>AtETC2-qF</i>	ATGGGAGTTTATCAGTATGACCGAA	Semiquantitative RT-PCR
<i>AtETC2-qR</i>	CGTCGTCGTTTGTGAGAAAATAGT	and qRT-PCR
<i>AtETC3-qF</i>	GATAACCATCGCAGGACTAAGCA	Semiquantitative RT-PCR
<i>AtETC3-qR</i>	GCTATCAGTTCCCACCTGTCACC	and qRT-PCR
<i>AtTRY-qF</i>	ATGGATAACACTGACCGTCG	Semiquantitative RT-PCR
<i>AtTRY-qR</i>	CTAGGAAGGATAGATAG	and qRT-PCR
<i>AtCPC-qF</i>	AGACAAGGCGGAAAAAATGG	Semiquantitative RT-PCR
<i>AtCPC-qR</i>	GCCAACGAGTTTATACATCCGA	and qRT-PCR
<i>AtGL1-qF</i>	CTCCACCGTCATTGTTTCATCACT	Semiquantitative RT-PCR
<i>AtGL1-qR</i>	GAGCCAGTTCTTGTTTTGGTTTATC	and qRT-PCR
<i>AtMYB23-qF</i>	ATCCAAACTCAAACCAAATCCA	Semiquantitative RT-PCR
<i>AtMYB23-qR</i>	GGCAATACCCATTAGTAAAATCCAT	and qRT-PCR
<i>AtGL2-qF</i>	CCCTCTGGATTCTCAATCA	Semiquantitative RT-PCR
<i>AtGL2-qR</i>	GACGAGTTTTGTACGGATT	and qRT-PCR
<i>AtGL3-qF</i>	CCAGCAAGATCCGATTATCACA	Semiquantitative RT-PCR
<i>AtGL3-qR</i>	ACTGAACATAGGCGCGTAAATCTC	and qRT-PCR
<i>AtEGL3-qF</i>	GACGACGATGTTTCATTACCAAGG	Semiquantitative RT-PCR

<i>AtEGL3-qR</i>	TTATCATCTTCTGCGATTTCTCTCC	and qRT-PCR
<i>AtTTG1-qF</i>	CTGGTGGTGATGATACACAGGCT	Semiquantitative RT-PCR
<i>AtTTG1-qR</i>	AATCTCCGAACCAGCCGAATA	and qRT-PCR
<i>AtTTG2-qF</i>	GCTTCATCATCAATCTCTTCAGGGT	Semiquantitative RT-PCR
<i>AtTTG2-qR</i>	CTTGGAACAGCAAACCTCAAATGGTG	and qRT-PCR
<i>AtACT2-F</i>	CCAGAAGGATGCATATGTTGGTGA	Semiquantitative RT-PCR
<i>AtACT2-R</i>	GAGGAGCCTCGGTAAGAAGA	and qRT-PCR
