

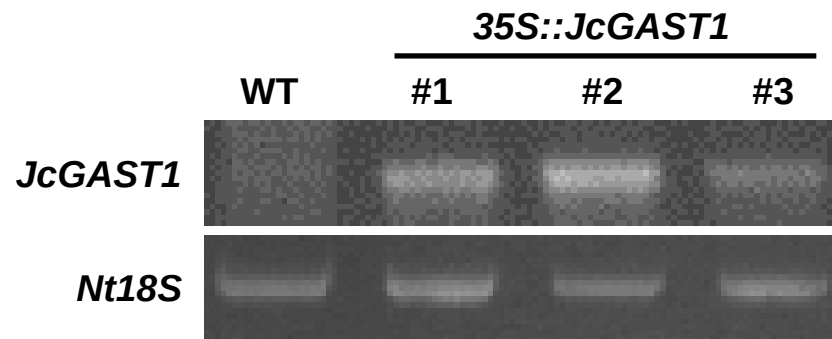


Fig. S1 Transcript abundance of *JcGAST1* in WT and overexpressing plants
RT-PCR analysis of *JcGAST1* expression in different lines, *Nt18S* was served as an internal control.

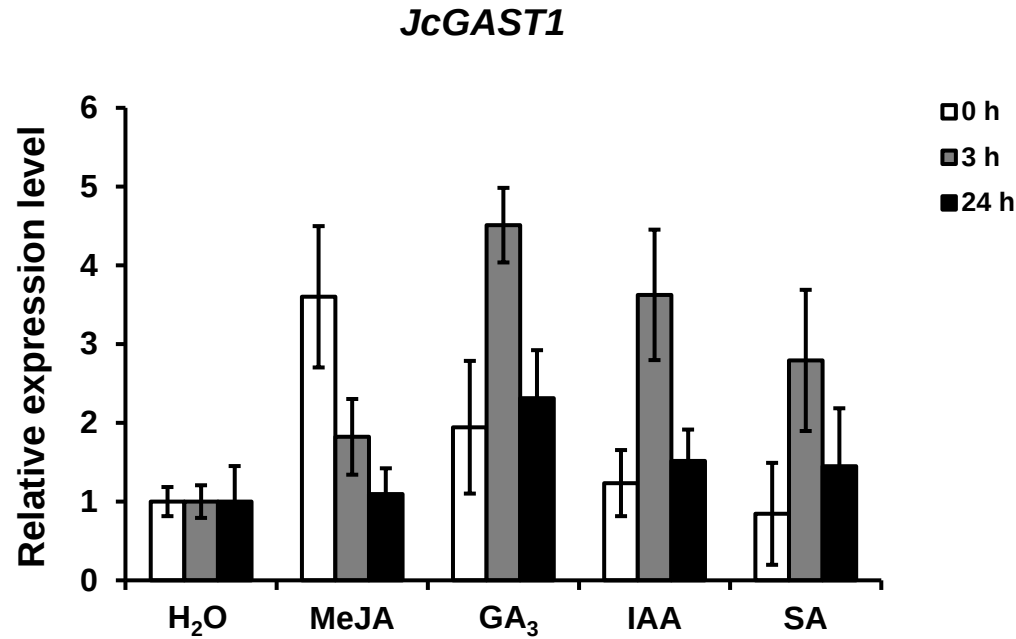


Fig. S3 Expressions of *JcGAST1* in response to different phytohormone

qPCR analysis of *JcGAST1* expression in response to MeJA, GA₃, IAA and SA. Total RNA was extracted from 3-month-old *Jatropha curcas* seedlings after treatment with 100 μ M MeJA, 100 μ M GA₃, 100 μ M IAA or 100 μ M SA for 3 or 24 h. *JcTBU* was served as an internal control. Error bars represent the standard deviation (SD).

Table S1. Primers used in this study

Primer name	Primer sequences (5'→3')	Purpose
JcGAST1-F	ATGGGAAGGGCGATAAGTATTGTCA	For constructs
JcGAST1-R	TCAAGGGCATTTAGGGCCTCCTCTC	For constructs
qJcGAST1-F	GGCATATTAGCTTCACAACCGCAAG	For RT-PCR or qPCR
qJcGAST1-R	CGTCGCCGAACACCTTGTAGTG	For RT-PCR or qPCR
qJcTUB-F	CTCTGCAACTATGAGTGGTGTAAACG	For qPCR
qJcTUB-R	CACGAGAAGTAAGTGGGGCAAA	For qPCR
Nt18S-F	GGTGGAGCGATTTGTCTGGT	For RT-PCR
Nt18S-R	CAGGCTGAGGTCTCGTTCGT	For RT-PCR
FL-F	CGGGATCCGGTCCTTCAGAGAGAGTTATT	For constructs
FL-R	CCCATGGTGCTATTGCAGAGTTAAAACTCGC	For constructs
P1-F	CGGGATCCCGGAAAGATAAAAAACAAATA	For constructs
P2-F	CGGGATCCAACGAGCCCATCACTACATC	For constructs
P3-F	CGGGATCCAGAATACTATCTGATTGTCGC	For constructs
P4-F	CGGGATCCTTCTTTGAACTTTCTTGA	For constructs
JcbZIP11-F	ATGGCTTCCTCCAGTGGAACAACAA	For constructs
JcbZIP11-R	AGAAACTATCAGCTGCTGGTTCCTC	For constructs
JcRF2a-F	ATGGGTGATACTGAAGAAGCTAGTA	For constructs
JcRF2a-R	TTGATTGGACTCGCCATTTGAGGTT	For constructs

JcALH9-F	CGGCCGCTCTAGAACTAGTGGATCCATGGCGAA CCGGTGGT	For constructs
JcALH9-R	TATCGATAAGCTTGATATCGAATTCTTAATAGGG TGGTCTCCATCC	For constructs
JcERF106-F	ATGGCAACTCCCCAAGAATCCTCTG	For constructs
JcERF106-R	GCAAAATAACGGTGACGGTTGCTCT	For constructs
JcPAT1-F	ATGGAAGTGATTGAAAGTCCGAGCG	For constructs
JcPAT1-R	ACACCGCCTTGACAACTAAGGAAT	For constructs
JcSAP8-F	CGGCCGCTCTAGAACTAGTGGATCCATGGACCA TGATGAGA	For constructs
JcSAP8-R	TATCGATAAGCTTGATATCGAATTCCTATATCTTA TCAAGCTTCT	For constructs
JcIAA9-F	CGGCCGCTCTAGAACTAGTGGATCCATGGGTGA TACTGAAG	For constructs
JcIAA9-R	TATCGATAAGCTTGATATCGAATTCCTATTGATTG GACTCG	For constructs

Table S2. Main *cis*-elements in *JcGAST1* gene promoter

Cis-elements	Consensus	Function	Elements Number
CAT-box	GCCACT	meristem expression	1
Box 4	ATTAAT	light responsiveness	1
G-box	CACGAC	light responsiveness	1
TCA-element	CCATCTTTT	salicylic acid-responsive element	1
GARE-motif	TCTGTTG	gibberellin-responsive element	1
TGA-Box	AACGAC	auxin-responsive element	1
CGTCA-motif	CGTCA	MeJA--responsive element	1
TC-rich repeats	CTTTTCTTAC	defense and stress responsiveness	1
ABRE	ACGTC	abscisic acid responsiveness	1
CAAT-box	CAAT/CAAAT/CCAAT	common cis-acting element in promoter and enhancer regions	33
TATA-box	ATATAA/ATATAT/ATTATA/TATA/TATATA/TATAAA	core promoter element of the transcription start	15

Table S3. Tissue specific cis-element of *JcGAST1* promoter

Cis-elements	Consensus	Function	Elements Number
GTGANTG10	GTGA	Pollen specificity	10
POLLEN1LELAT52	AGAAA	Pollen specificity	16
DPBFCOREDCDC3	ACACNNG	Embryo specificity	1
RYREPEATBNNAPA	CATGCA	Seed specificity	3
CACTFTPPCA1	YACT	Mesophyll specificity	35
OSE1ROOTNODULE	AAAGAT	Root specificity	3
OSE2ROOTNODULE	CTCTT	Root specificity	2
ROOTMOTIFTAPOX1	ATATT	Root specificity	10
RHERPATEXPA7	KCACGW	Root hair specificity	2
RYREPEATVFLEB4	CATGCATG	Seed specificity	2

Table S4. Transcription factors with interact with CCTTTT or CGTCA motif

Sequence name	Length (bp)	Results of blast	accession numbers	identities
CCTTTT-3	998	Jatropha curcas transcription factor RF2a (LOC105643824)	XM_012229037.3	936/936(100%)
CCTTTT-58	998	Jatropha curcas auxin-responsive protein IAA9 (LOC105630756)	XM_012212698.3	190/199(95%)
CCTTTT-90	979	Jatropha curcas AT-hook motif nuclear-localized protein 9 (LOC105643001)	XM_012228026.3	287/296(97%)
CCTTTT-170	785	Jatropha curcas ethylene-responsive transcription factor ERF106 (LOC105648652)	XM_012235114.3	559/561(99%)
CCTTTT-183	989	Jatropha curcas bZIP transcription factor 11 (LOC105630130)	XM_012211837.3	864/874(99%)
CCTTTT-191	944	Jatropha curcas protein PAT1 homolog (LOC105646218)	XM_012232033.3	859/888(97%)
CGTCA-13	898	Jatropha curcas zinc finger A20 and AN1 domain-containing stress-associated protein 8 (LOC105648255)	XM_012234577.3	811/864(94%)
CGTCA-79	998	Jatropha curcas AT-hook motif nuclear-localized protein 9 (LOC105643001)	XM_012233919.3	908/935(97%)
CGTCA-96	998	Jatropha curcas auxin-responsive protein IAA9 (LOC105630756)	XM_012212698.3	487/487(100%)