Title:

Overexpression of *SlUPA-like* induces cell enlargement, aberrant development and low stress tolerance through phytohormonal pathway in tomato

Authors:

Baolu Cui, Zongli Hu, Jingtao Hu, Yanjie Zhang, Wencheng Yin, Zhiguo Zhu, Ye Feng, and Guoping Chen *

Key Laboratory of Biorheological Science and Technology (Chongqing University), Ministry of Education, Bioengineering College, Chongqing University, Chongqing 400044, People's Republic of China

Supplementary Information

Genes	the number of CANNTG motifs	the number of CACGTG motifs	Chromosomes
SlGID1-A	3	1	9
SlGID1-B	2	0	6
SlGID1-C	2	2	1
SIGAST1	6	0	2
SlPRE1	8	1	2
SIPRE2	3	0	2
SIPRE3	8	0	6
SlPRE4	6	0	5
SIPRE5	9	0	4
SIJAZ2	2	0	12
SIJAZ9	3	1	8
SIJAZ10	8	1	8
SIJAZ11	6	1	8

Table S1. Statistical analysis of putative binding sites for bHLH transcription factor in the promoters of related genes

qSICAC-FCCTCCGTTGTGATGTAACTGGqSICAC-RATTGGTGGAAAGTAACATCATCGqipequetticGCTGTCAACGTACGCTACGTAACGCATGACAGTGTTTTTTTT	Primer names	Sequences $(5' \rightarrow 3')$
qSICAC-RATTGGTGGAAAGTAACATCATCGOigo(dT)GCTGTCAACGATACGCTACGTAACGGCATGACAGTGTTTTTTTT	qSlCAC-F	CCTCCGTTGTGATGTAACTGG
oligo(dT)GCTGTCAACGATACGCTACGTAACGGCATGACAGTGTTTTTTTT	qSlCAC-R	ATTGGTGGAAAGTAACATCATCG
qNPTII-FGACAATCGGCTGCTCTGAqNPTII-RAACTCCAGCATGAGATCCSIUPA-like-FCGCGGATCCATGGCTGCTTTTCATCACACCSIUPA-like-FGCTGTCAACGATACGAAGAACAAAAGTTGTTGCdT-RGCTGTCAACGATACGCACGTAACGqSIUPA-like-FGGGTCTTCTTCATGACTACTGCqSIUPA-like-RTTTCATCTTTGGCTACTAACTGCqSIUPA-like-RTTTCATCTTGGCTACTAACTGCqSIUPA-like-RTTTCATCTTGGCGACTACACGTqSIUPA-like-RTTTCATCTTGGCGACTTCATCACAAGqGA20x1-FTTCCCAAATGGCTTCATGACAAGAqGA20x1-RTTCCCCCTAATTCCCATAACATqGA20x2-FTAAGAAGGATAAGGGGGGGGAGGCqGA30x1-RGGATGAAAGGACCCTCGAAATqGA30x1-RGGATGAAAGTGCCTTGTCAAAATqGA30x2-FGTAAGACCAAAGGAACCCTCAAAATqGA30x2-RGCCGAACAGATGAAAGTGCTqGA30x2-RGCCGAACAGATGAAAGTGCTqGA30x2-RGCCGAACAGATGAAAGTGCTqGA20x1-RTTCTCAACTTTGCqGA20x1-RTTCTGATTCACACTATTGCqGA20x1-RGCCGAACAGATGAAAGTGCTqGA20x1-RGCCGAACAGATGAAAGTGCTqGA20x1-RGCCGAACAGATGAAAGAGAGACAATTqGA20x1-RTTCTAACGATGTCTTTGAACACCqGA20x1-RGCTAGAGCGACGATTGCGAAqSIPRE1-FCGAACAACAGAGAAAAGAGAGAGACAATTqSIPRE1-FCGAACAACAGAACGAAAAGAGAGAGACATTqSIPRE2-FTTCCACCTCCACTTACCACCACACATqSIPRE3-RCCTTCATCTCTTATCCTGGAACCACATqSIPRE3-RCCTTCATATCCACCACCTCTCTGTGTAAqSIPRE3-RCCTGATTGTTAAATGTCCGGTGAqSIPRE3-RCCTGATTGTTAAATGTTCGGTGAqSIPRE3-RCCTGATTGTTAAATGTTCGGTGA	oligo(dT)	GCTGTCAACGATACGCTACGTAACGGCATGACAGTGTTTTTTTT
qNPTII-RAACTCCAGCATGAGATCCSIUPA-like-FCCGCGGATCCATGGCTGCTTTTCATCACACCSIUPA-like-FCCGGGATCCATGGCTGCTTTTCATCACACCdT-RGCTGTCAACGATACGCTACGTACCGTqSIUPA-like-FGGGTCTTCTTCTATGACTTCTGCGTqSIUPA-like-RTTTCATCTTTGGCTACTAACATTGCqSIUPA-like-RTTTCCACATTTCGCACGATTCATCATAqGA200x1-FTTTCTCAAATTGGCTTCATGAACATqGA200x1-RTTTCCCCTAATTCCCATAACATqGA200x2-FCCGTAGTTTCTGTGAAGGCAqGA30x1-FATAGGCACCCACCCTTGTATAqGA30x1-FGGATGAAAGTGCCTTGTCAAATqGA30x2-FGTAGACCAAAGGAACCCTCAAATqGA30x2-FGTAGACCAAAGGAACCTCAAATqGA30x2-FGTAGACCAAAGGAACCTCAAATqGA30x2-FGTAGACCAAAGGAACCTCAAATqGA30x1-FATAGGCACCACCACACTATTGCqGA30x2-FGTAGACCAAAGGAACACTCAATqGA30x2-FGTAGACCAAAGGAACACTATTGCqGA51-FCAACAACAGAGAAATAACCAACqGA51-FCAACAACAGAGAAATAACCAACqGA51-FCGACAACAGAGAAATAACCAACqGA51-FCGAAAGAACGAAAAGAGAGAACACTTqSIPRE1-FCGAAAGAACGAAAAGAGAGAACACTTqSIPRE1-FCGAAAGAACGAAAAGAGAGAACACATqSIPRE2-RCGACGATTACGAATTCCAGAACACATqSIPRE3-RTCCTCACTTACCATTACCATCACCTCCqSIPRE4-FATCAAATCGCTGATCTCGTGTGTAqSIPRE5-FCCTGATTGATTGTCCGAACGGqSIPRE5-FCCTGATTGATTGTCTCGAACCGqSIPRE5-RCCTGATTGATTGTTTTTTTTTGGGGAqSIPRE5-RCCTGATTGATTGTTTTTTTTTGGGGAqSIPRE5-RCTGATTGTTGTCTGGAACCGqSIPRE5-RCTGATTGTTGTCTGGAACCG <tr< td=""><td>qNPTII-F</td><td>GACAATCGGCTGCTCTGA</td></tr<>	qNPTII-F	GACAATCGGCTGCTCTGA
SIUPA-like-FCGCGGATCCATGGCTGCTTTTTCATCACACCSUPA-like-RCCGGAATTCTTAATGGAAAGAACAAAAGTTGTTGCdT-RGCTGTCAACGATACGCTACCTAACGqSIUPA-like-FGGGTCTTCTTCTATGGCTACTAACTGCqSIUPA-like-RTTTCATCTTTGGCTACTAACTGCqSIUPA-like-RTTTCATCTTTGGCTACTAACTTGCqSIUPA-like-RTTTCATCTTTGGCTACTAACTTGCqSIUPA-like-RTTTCATCTTTGGCTACTAACTTGCqSIUPA-like-RTTTCATCTTTGGCTACTAACATTGCqGA200x1-FTTCCCCAAATGGCTTCATGATCAAqGA200x2-FTAAGAAGGATAAGGTGGTGAAGCCqGA200x2-RCCGTAGTTTTCTGTTGAAGCCAqGA30x1-FATAGGCACCACCCTTGTATAqGA30x2-FGTAGAACGAAGGATCCAAATTqGA30x2-FGTAGACCAAAGGAACCACCTCGAAATqGA30x2-FGTAGACCAAAGGAACCCTCAAATqGA30x2-FGTCTGATTTCACACTATTGCqGA20x1-FATTAAGATCCAAT AACACTTCGqGA20x1-FTTATAAGATGCTTTGAAACTCCqGA20x1-FGTAGAACGAAAGAGAACAACTTCGqGA20x1-FGTAGAACGAAAAGAGAACAACTTCGqGA20x1-FATTAAGATCCAATAACCAACCqGA20x1-FTTATACGATGTCTTGAACACCqGA20x1-FATTAAGATGCTTTGAACACCqGA20x1-FCAACAACAGAAAAGAAGAACAATTGCqGA20x1-FTTCTCAACTCCACTATTGCqGA20x1-FATTAAGATGCTCTTGAAACCCqGA20x1-FCAACAACAGAAGAAGAACAACATTGCqGA20x1-FCAACAACAGAACAGAAACAACAACAACCqGA20x1-FCAACAACAGAACAGAACACAACAACAACAACAACAACAAC	qNPTII-R	AACTCCAGCATGAGATCC
SIUPA-like-RCCGGAATTCTTAATGGAAAGAACAAAAGTTGTTGCdT-RGCTGTCAACGATACGCTACGTAACGqSIUPA-like-FGGGTCTTCTTCTATGACTTCTGCTqSIUPA-like-RTTTCATCTTTGGCTACTAACTTGCqSIUPA-like-RTACTGGTGGTTTTGAAGCTGqSIEFIa-FTACTGGTGGTTTTGAAGCTGqSIEFIa-RAACTTCCTTCACGATTCATCATAAqGA200x1-FTTTCCCACTAATTGGCTGAAGCAqGA200x2-FTAAGAAGGATAAGGTGGTGAGGCqGA200x2-RCCGTAGTTTTCTGTTGAAGCCAqGA30x1-RGGATGAAAGTGCCTTGTCAAATTqGA30x1-RGGATGAAAGTGCCTTGTCAAAATqGA30x2-RGCCGAACAGATGAAAGTGCTqGA20x1-FATTAAGATCCAATAACACTTCGqGA20x1-FGTAGACCAACGAAGAACCTCCAAATqGA30x1-RGCCGAACAGATGAAAGTGCTqGA30x1-RGCTAGACCAACACATTTCGqGA30x1-RTCTTGATTCACACTATTGCqGA20x1-FATTAAGATCCAATAACCAACqGA20x1-FGCTAGACCAACAGAGAAATAACCAACqGA20x1-FGCTAGACCAACAGAGAACACCqGA5T1-RTTATACGATTCTTTGAACACCqGA20x1-RTCTTGATTCACACTATTGCqGA5T1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGACGATTACGAAATAACCAACqSIPRE2-FTATGTCTGGAGAAGAGAGACATTqSIPRE2-FTTCACACTCTCCTCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTCGAACACACATqSIPRE4-RCCCTTCTCTCTTGTCCCAAACTGTCCqSIPRE5-RCCTTCTCTCTTTTTTTTGGGGAqSIPRE5-RCCTGATTGTTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTGTTGAACCGqSIPRE5-R	SlUPA-like-F	CGCGGATCCATGGCTGCTTTTTCATCACACC
dT-RGCTGTCAACGATACGCT ACGT AACGqSIUPA-like-FGGGTCTTCTTCTATGACTTCTGCTqSIUPA-like-RTTTCATCTTTGGCTACTAACTTGCqSIEF1a-RAACTTCCTTCACGATTTCATCATAqGA200x1-FTTCTCAAATTGGCTTCATGATCAAAqGA200x1-FTTCCCCCTAATTCCCATAACCATqGA200x2-FTAAGAGGAT AAGGTGGTGAGGCqGA30x1-FATAGGCACCCACCCTTGTTAAAqGA30x1-FGGATGAAAGTGCCTTGTCAAAATqGA30x2-FGTAGACCAAAGGAACCCTCAAATqGA30x2-FGTAGACCAAAGGAACCCTCAAATqGA30x2-FGCCGAACAGATGAAAGTGCCTqGA30x2-FGCCGAACAGATGAAAGTGCCTqGA30x2-FGCCGAACAGATGAAAGTGCTqGA30x2-FGCCGAACAGATGAAAGTGCTqGA30x1-FATTAAGATCCAAT AACCATTCGqGA20x1-FATTAAGATCCAAT AACCACCqGA511-FCGAAGAACGAAGATGAACGAAAGAGAACAACqGA511-FCGAACAACGAGAAGAGAACAACqGAST1-RTTATACGATGTCTTGAACACCqSIPRE1-FCGACAGATTACGAATTTCAGGAAGqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE3-FTTCACACTCTCCTTAGCAACACATqSIPRE3-FCCTCACTTATCCTTGATCCTCCqSIPRE3-FCCTGATTATCCTTATCCTTGTTCCqSIPRE3-FCCTGATTATCCTTATCTCTGTGTAACTGTCqSIPRE3-FCCTGATTGTCCATAACTGTCCqSIPRE3-FCCTGATTGTTCCqSIPRE3-FCCTGATTGTTCATACCACCTqSIPRE3-FCCTGATTGTTCCTTTTTTTTGGGGAqSIPRE3-RCCTGATTGTCTCCATAACTGTCCqSIPRE3-RCCTGATTGTTCTTTTTTTTGGGGAqSIPRE3-RCCTGATTGTCCCATACCTGTTGTCCqSIPRE3-RCCTGATTGTTCTTTTTTTTTGGGGAqSIPRE3-RCC	SlUPA-like-R	CCGGAATTCTTAATGGAAAGAACAAAAGTTGTTGC
qSIUPA-like-FGGGTCTTCTCTATGACTTCTGCTqSIUPA-like-RTTTCATCTTTGGCTACTAACTTGCqSIEF1a-FTACTGGTGGTTTTGAAGCTGqSIEF1a-RAACTTCCTTCACGATTTCATCATAqGA200x1-FTTCTCCAAATTGCCTTCATGATCAAAqGA200x2-RCCCGTAGTTTCTGTTGAAGCCAqGA200x2-RCCGTAGTTTCTGTTGAAGCCAqGA30x1-FATAGGCACCCACCCTTGTCAAATqGA30x2-FGTAGACCAAAGGAACCCTCAAATqGA30x2-RGCCGAACAGATGAAAGTGCCTTGTCAAAATqGA30x2-RGCCGAACAGATGAAAGTGCCTqGA30x2-RGCCGAACAGATGAAAGTGCTqGA30x2-RGCCGAACAGATGAAAGTGCTqGA30x2-RGCCGAACAGATGAAAGTGCTqGA30x1-FATTAAGATCCAAT AACACTTCGqGA20x1-FCTTTGATTTCACACTTTGCqGA51-RTCTTGATTTCACACTTTGCqGAS1-RTCTTGATTTCAGGAAGACAACAqGAS1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAGAACGAAAGAGAAGGACAATTqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE3-FTTCACACTCTCCATAGCAACACACAqSIPRE3-FCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCCATCCACTTCTCTGTGTAqSIPRE5-FCCTTCTCTTTTTTTTGTCCAACCGqSIPRE5-FCCTGATTATCTTTTTTTTTTTTGTGGGAAqSIPRE5-FCCTGATTGTTCCqSIPRE5-RCCTGATTGTTCTCCATAACTGTCCqSIPRE5-RCCTGATTGTTTGTTAATGTTCGGTGAqSIPRE5-RCCTGATTGTTTGTTAATGTTCGGGAqSIPRE5-RCCTGATTGTTCTTTTTTTTGGGGAqSIPRE5-RCCTGATTGTTCTCCATAACTGTCCGGTGAqSIPRE5-RCCTGATTGTTCTTTTTTTTGGGGAqSIPRE5-RCCTGATTGTTGTTAATGTTCGGTGAqSIPRE5-R <t< td=""><td>dT-R</td><td>GCTGTCAACGATACGCT ACGT AACG</td></t<>	dT-R	GCTGTCAACGATACGCT ACGT AACG
qSIUPA-like-RTTTCATCTTTGGCTACTAACTTGCqSIEF1a-FTACTGGTGGTTTTGAAGCTGqSIEF1a-RAACTTCCTTCACGATTTCATCATAqGA200x1-FTTCTCCAAATTGGCTTCATGATCAAAqGA200x2-FTAAGAAGGATAAGGTGGTGGAGGCqGA200x2-RCCGTAGTTTTCTGTTGAAGCCAqGA30x1-FATAGGCACCACCCTTGTAAAqGA30x1-FGGATGAAAGGACCCCCAAATqGA30x2-FGTAGACCAAAGGAACGCCTCAAATqGA30x2-FGTAGACCAAAGGAACCCTCAAATqGA30x2-FGCCGAACAGATGAAAGTGCTqGA30x2-FGCCGAACAGATGAAAGTGCTqGA30x2-RGCCGAACAGATGAAAGTGCTqGA20x1-FATTAGGATCCAAT AACACTTCGqGA20x1-FCTTGATTTCACACTATTTGCqGA20x1-FCAACAACAGAGAAAAAACACTTCGqGA20x1-FTTATACGATGTCTTTGAACACCqGA20x1-FCAACAACAGAGAAAAAAAGAGAGACATTqGA20x1-FCAACAACAGAGAAAAAAAGAGAGACAATqGA20x1-FCAACAACAGAGAAAGAAGAGAGACATTqGA20x1-FCAACAACAGAGAAAGAAGAGAGACATTqGA20x1-FCAACAACAGAGAAAAAAAGAGAGAGACATTqGA20x1-FTTTAACGATGTCTTTGAACACCqGA20x1-FTTTAACGAACGAAAAGAGAGAGAAATqGA20x1-FCAACAACAGAAGAAAGAAAGAGAGAAATqGA20x2-FCAACAACAGAACGAAAAGAAGAGAAAAAAAAAAAAAAA	qSlUPA-like-F	GGGTCTTCTTCTATGACTTCTGCT
qSIEF1a-FTACTGGTGGTTTTGAAGCTGqSIEF1a-RAACTTCCTTCACGATTTCATCATAqGA200x1-FTTCTCAAATTGGCTTCATGATCAAqGA200x2-FTAAGAAGGATAAGGTGGTGGAGGCqGA200x2-RCCGTAGTTTTCTGTTGAAGCCAqGA30x1-FATAGGCACCCACCCTTGTATAqGA30x1-FGGATGAAAGTGCCTGTCAAAATqGA30x2-RGCCGAACAGATGAACCTCAAAATqGA30x2-RGCCGAACAGATGAACCTCAAAATqGA30x2-RGCCGAACAGATGAACCTCAAAATqGA30x2-RGCCGAACAGATGAACCTCAAATqGA30x2-RGCCGAACAGATGAACCTCAGAATqGA30x2-RGCCGAACAGATGAAACTGCTqGA20x1-FATTAAGATCCAAT AACACTTCGqGA20x1-FCAACAACAGAGAAAATAACCAACqGA20x1-FCAACAACAGAGAAAATAACCAACqGA20x1-FTTATACGATGTCTTTGAACACCqGA20x1-RTCTTGATTCACACTATTTGCqGA20x1-RTCTTGATTCACACTATTGCqGAST1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAACGAAAAGAGAGAGAGACATTqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE3-FTCCTCACTTACCTTGATCCTCCqSIPRE3-FTCCTCACTTACCTCCATAGCAACACATqSIPRE3-RCACTTAATCCATCCACTTCTTGTTCCqSIPRE3-RCCCTGATTGTTGTCAAACTTGTCqSIPRE5-FCCTTCTCTTTGTCCAACTTGTTCCqSIPRE5-FCCTGATTGTTGTCAACCGqSIPRE5-RCCTGATTGTTGTCAAACTTGTCqSIPRE5-RCCTGATTGTTTAAATGTCGGTGAAqSIPRE5-RCCTGATTGTTTAAATGTCGGTGGAAqSIPRE5-RCCTGATTGTTGTAAACTTGTTTTTTTGGGGAqSIPRE5-RCTGATTGTTAAATGCTTGGTGGGGCGTATqSIPRE5-RCTGATTGTTAAATGCTTGGTGGGGGAAqSIPRE5-R <td>qSlUPA-like-R</td> <td>TTTCATCTTTGGCTACTAACTTGC</td>	qSlUPA-like-R	TTTCATCTTTGGCTACTAACTTGC
qSIEF1a-RAACTTCCTTCACGATTTCATCATAqGA20ox1-FTTCTCAAATTGGCTTCATGATCAAqGA20ox1-RTTCCCCCTAATTCCCATAACATqGA20ox2-FTAAGAAGGAT AAGGTGGTGAGGCqGA3ox1-FATAGGCACCCACCCTTGTATAqGA3ox1-FGGATGAAAGTGCCTTGTCAAAATqGA3ox2-FGTAGACCAAAGGAACCCTCAAATqGA3ox2-FGTAGACCAAAGGAACCCTCAAATqGA2ox1-FATTAAGATCCAAT AACACTTCGqGA2ox1-FATTAAGATCCAAT AACACTTCGqGA2ox1-FCCGAACAGATGAAAGTGCTTGTCAAAATqGA3ox2-RGCCGAACAGATGAAAGTGCTqGA2ox1-FATTAAGATCCAAT AACACTTCGqGA2ox1-FCAACAACAGAGAGAAT AACCAACqGAST1-FCAACAACAGAGAGAGACCAACCqGAST1-FCGAAGAACGAAAAGAGAGACAACCqGAST1-RTTATACGATGTCTTGAACACCqGAST1-RCTAGAGCGACGATTGCGAAqSIPRE1-FCGAAGAACGAAAAGAGAGAGACAAGAGqSIPRE2-FTATGTCTGGGAGAAATTCCACCACATqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-FCCTTCTCTTTTTCTTGTTCCqSIPRE3-FCCTTCTCTCTTTTTTTTTTCTGTGTAqSIPRE3-RCCTGATGATGCTCCAAACCGqSIPRE3-RCCTGATGATTGTCTCGAACCGqSIPRE3-RCCTGATGATTGTTCCAAACTGTCqSIPRE3-RCCTGATGATTGTTCCGAACCGqSIPRE3-RCCTGATTGTTAAATGTTCGGTGAqSIPRE3-RCCTGATTGTTAAATGTTCGGTGAqSIPRE3-RCCTGATTGTTTGTTAAATGTTCGGTGAqSIPRE3-RCCTGATTGTTTGTTAAATGTTCGGTGAqSIPRE3-RCCTGATTGTTTTTTTTTTTTTTGGGGAqSIPRE3-RCCTGATTGTTAAATGTTCGGTGGTCGTATqSIPRE3-RCCTGATGATGGTGGGTCGTAT <td>qSlEF1a-F</td> <td>TACTGGTGGTTTTGAAGCTG</td>	qSlEF1a-F	TACTGGTGGTTTTGAAGCTG
qGA20x1-FTTCTCAAATTGGCTTCATGATCAAqGA20x1-RTTCCCCCTAATTCCCATAACATqGA20x2-FTAAGAAGGAT AAGGTGGTGAGGCqGA20x2-RCCGTAGTTTTCTGTTGAAGCCAqGA3x1-FATAGGCACCCACCCTTGTATAqGA3x2-FGGATGAAAGTGCCTTGTCAAAATqGA3x2-FGTAGACCAAAGGAACCCTCAAATqGA3x2-RGCCGAACAGATGAAAGTGCTqGA2x1-FATTAAGATCCAAT AACACTTCGqGA2x1-FCTTGATTCACACTATTGCqGA2x1-FCAACAACAGAGAGAACACCqGA2x1-FCAACAACAGAGAGAACAACACqGA2x1-FCAACAACAGAGAGAAT AACCAACqGA2x1-FCAACAACAGAGAGAATAACCAACqGA2x1-FCAACAACAGAGAGACAATAACCAACqGA2x1-FCAACAACAGAGAGACAACAACACqGA2x1-FCAACAACAGAGAGACAACACqGA2x1-FCAACAACAGAGAGAATAACCAACqGA2x1-FCAACAACAGAGAGAGACAACACqGA2x1-FCAACAACAGAGAGAGACAACACCqGAST1-FCAACAACAGAGAGAGAGACAACACqGAST1-RTTATACGATGTCTTGAACACCqSIPRE1-FCGACGATTACGAAAGAGAGACAACACATqSIPRE2-FTATGTCTGGAGAGAGGTCAAGGAqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-FCCTTCTCTCTTTGTCCATAACTGTCqSIPRE4-FATCAAATCGCTGATCTTCTTTGTCCAACCGqSIPRE5-FCCTTCTCTCTTTTTTTTTGGGGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAATGTTTTTTTTTGGGGAqSIPRE5-RCTGATTGTTGTTAATGTTGGGGGTCGTATqSIPRE5-RCTGATTGTTGTTAATGTTTTT	qSlEF1a-R	AACTTCCTTCACGATTTCATCATA
qGA20ox1-RTTCCCCCTAATTCCCATAACATqGA20ox2-FTAAGAAGGAT AAGGTGGTGAGGCqGA20ox2-RCCGTAGTTTTCTGTTGAAGCCAqGA3ox1-FATAGGCACCCACCCTTGTATAqGA3ox1-RGGATGAAAGTGCCTTGTCAAAATqGA3ox2-FGTAGACCAAAGGAACCCTCAAATqGA2ox1-FATTAAGATCCAAT AACACTTCGqGA2ox1-FATTAAGATCCAAT AACACTTCGqGA2ox1-FCAACAACAGAGAAAT AACCAACqGA2ox1-FATTAAGATCCAAT AACACTTCGqGA2ox1-RTCTTGATTTCACACTATTTGCqGAST1-RTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAACGAAAAGAGAGACAATqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE3-FTCCTCACTTATCCTTGATCCTCCqSIPRE3-RCCCTCACTTATCCTTGATCCTCCqSIPRE3-RCCCTCTCTCTTGTCACACTATGTCqSIPRE5-FCCTTCTCTCTTTGTCCAACTGTCTqSIPRE5-FCCTGATGATTGTCTCGAACCGqSIPRE5-FCCTGATTGTTTGTTCCACACCGqSIPRE5-FCCTGATTGTTTGTTCCGACGACGqSIPRE5-RCCTGATTGTTTGTTCCGACGACGqSIPRE5-RCCTGATTGTTTGTTCCGACGGGACGACGqSIPRE5-RCCTGATTGTTTGTTCCGACCGqSIPRE5-RCCTGATTGTTTGTTCCGACGGGACGACGqSIPRE5-RCCTGATGATTGTTCCGACCGqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAACCGqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAACGqSIPRE5-RCCTGATTGTTTAAATGTTCGGTGAACCGqSIPRE5-RCCTGATTGTTAAATGTTCGGTGGTCGTATqSIPRE5-RCTGATTGTTAAATGTTCGGTGGTCGTATqSIPRE5-RCTGATTGTTTAAATGTTCGGTGGTAT <t< td=""><td>qGA20ox1-F</td><td>TTCTCAAATTGGCTTCATGATCAA</td></t<>	qGA20ox1-F	TTCTCAAATTGGCTTCATGATCAA
qGA20x2-FTAAGAAGGAT AAGGTGGTGAGGCqGA20x2-RCCGTAGTTTTCTGTTGAAGCCAqGA3x1-FATAGGCACCCACCCTTGTATAqGA3x1-RGGATGAAAGTGCCTTGTCAAAATqGA3x2-FGTAGACCAAAGGAACCCTCAAATqGA3x2-RGCCGAACAGATGAAAGTGCTqGA2x1-FATTAAGATCCAAT AACACTTCGqGA2x1-RTCTTGATTTCACACTATTTGCqGAST1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAGCGACGATGCAAGGAqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE3-FTCCTCACTTATCCTGATCCTCCqSIPRE3-FTCCTCACTTATCCTTGATCCTCCqSIPRE3-FCCCTCTCTCTTTGTCCqSIPRE3-FCCTCACTTACCACTACTTGTTCCqSIPRE3-FCCTCACTTATCCTGGTGAAqSIPRE3-FCCTCTCTCTTTTTTTTGGGGAqSIPRE3-FCCTCTCTCTTTTTTTTTTTTTTTTTTTTTTTTTTTTT	qGA20ox1-R	TTCCCCCTAATTCCCATAACAT
qGA20ox2-RCCGTAGTTTTCTGTTGAAGCCAqGA3ox1-FATAGGCACCCACCCTTGTATAqGA3ox1-RGGATGAAAGTGCCTTGTCAAAATqGA3ox2-FGTAGACCAAAGGAACCCTCAAATqGA3ox2-RGCCGAACAGATGAAAGTGCTqGA2ox1-FATTAAGATCCAAT AACACTTCGqGA2ox1-RTCTTGATTTCACACTATTTGCqGA2ox1-RTCTTGATTTCACACTATTTGCqGA2ox1-RTCTTGATTTCACACTATTTGCqGA2ox1-RTCTTGATTTCACACTATTTGCqGA2ox1-RTCTTGATTCCACACACAqGA2ox1-RTCTTGATTCCACACTATTGCqGA2ox1-RTCTTGATTCCACACTATTGCqGAST1-RTCTTGATCTGAGAGAGACACAqGAST1-RTTATACGATGTCTTGAACACCqSIPRE1-FCGAAAGAACGAAAAGAGAGAGACATTqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE4-FATCAAATCGCTGATCTTGTTAACACTGGTGAqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-FCCTGATGATGTCTCGAACCGqSIPRE5-RCTGATTGTTGTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTGTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTGTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTGTTAAATGTTCGGTGA </td <td>qGA20ox2-F</td> <td>TAAGAAGGATAAGGTGGTGAGGC</td>	qGA20ox2-F	TAAGAAGGATAAGGTGGTGAGGC
qGA3ox1-FATAGGCACCCACCCTTGTATAqGA3ox1-RGGATGAAAGTGCCTTGTCAAAATqGA3ox2-FGTAGACCAAAGGAACCCTCAAATqGA3ox2-RGCCGAACAGATGAAAGTGCTqGA2ox1-FATTAAGATCCAAT AACACTTCGqGA2ox1-RTCTTGATTTCACACTATTTGCqGAST1-FCAACAACAGAGAGAAATAACCAACqGAST1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAACGAAAGAGGACAATTqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE3-FTTCACACTCTCCATAGCAACAACqSIPRE3-FTCCTCACTTATCCTTGATCTCCqSIPRE3-FCCTCACTTATCCTTGATCCTCCqSIPRE3-FCCTCACTTATCCTTGATCTCCqSIPRE3-FCCTTCTCTTTTGTCATACCACTGTCTCCqSIPRE3-FCCTTCTCTCTTTTGTCCATAGCAACAGAqSIPRE3-FCCTTCTCTTTTGTCCATAGCAACCGqSIPRE3-FCCTGATTATCATCCACTTGTTGTCqSIPRE3-FCCTGATGATGTCCCATAGCAACGGAqSIPRE3-FCCTGATGATGTCTCGAACCGqSIPRE3-FCCTGATGATGTCTCGAACCGqSIPRE3-FCCTGATGATGTCTCGAACCGqSIPRE3-FCCTGATTGTTAAATGTTCGGTGAqSIPRE3-RAGAATGATTCTTTTTTTTTTGGGGAqSIPRE3-RCACTAATCCATCCACTTCTTTTTTTTTTTTTTTTTTTT	qGA20ox2-R	CCGTAGTTTTCTGTTGAAGCCA
qGA3ox1-RGGATGAAAGTGCCTTGTCAAAATqGA3ox2-FGTAGACCAAAGGAACCCTCAAATqGA3ox2-RGCCGAACAGATGAAAGTGCTqGA2ox1-FATTAAGATCCAATAACACTTCGqGA2ox1-RTCTTGATTTCACACTATTGCqGAST1-FCAACAACAGAGAAATAACCAACqGAST1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAACGAAAAGAGAGAGACAATqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE3-FTTCACACTCTCCATAGCAACACAqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTACCqSIPRE5-FCCTTCTCTTTGTCCATAACTGTCqSIPRE5-FCCTGATGATGTCTCGAACCGqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGGAAqSIPRE5-RCCTGATGATTGTTTTTTTTGGGGAqSIPRE5-RCCTGATGATTGTTCCqSIPRE5-RCCTGATGATTGTTCCGATCTCTTTTTTTTTTTTTTTTTT	qGA3ox1-F	ATAGGCACCCACCCTTGTATA
qGA3ox2-FGTAGACCAAAGGAACCCTCAAATqGA3ox2-RGCCGAACAGATGAAAGTGCTqGA2ox1-FATTAAGATCCAATAACACTTCGqGA2ox1-RTCTTGATTTCACACTATTTGCqGAST1-FCAACAACAGAGAAATAACCAACqGAST1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAACGAAAAGAGAGAGACAATTqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTAACGAACTGTCqSIPRE5-FCCTTCTCTCTTTGTCCATAACTGTCqSIPRE5-FCCTGATGATGTCTCGAACGGqSIPRE5-RCTGATTATGTTTGTCAGAACGGqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGTGAACCGqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGTGAACCGqSIPRE5-RCTGATTGTTAAATGTTCGTGAACCGqSIPRE5-RCTGATTGTTAAATGTTCGTGAACCGqSIPRE5-RCTGATTGTTAAATGTTCGTGAACCGqSIPRE5-RCTGATTGTTAAATGTTCGTGAACCGqSIPRE5-RCTGATTGTTAAATGTTCGTGAAqSIPRE5-RCTGATTGTTAAATGTTCGTGAAqSIPRE5-RCTGATTGTTAAATGTTCGTGAAqSIPRE5-RCTGATTGTTAAATGTTCGTGAAqSIPRE5-RCTGATTGTTAAATGTTCGTGAAqSIPRE5-RCTGATTGTTAAATGTTCGTGAAqSIPRE5-RCTGATTGTTAAATGTTCGTGAAqSIPRE5-RCTGATTGTTAAATGTTCGTGAACCGqSIPRE5-RCTGATTGTTAAATGTTCGTGAAqSIPRE5-RCTGA	qGA3ox1-R	GGATGAAAGTGCCTTGTCAAAAT
qGA3ox2-RGCCGAACAGATGAAAGTGCTqGA2ox1-FATTAAGATCCAATAACACTTCGqGA2ox1-RTCTTGATTTCACACTATTTGCqGAST1-FCAACAACAGAGAAATAACCAACqGAST1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAACGAAAAGAGGACAATTqSIPRE2-FTATGTCTGGGAGAAAGGTCAAGGAqSIPRE3-FCGACGATTACGAATTCCAGGAAGGACAATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTCTTGTTCCqSIPRE5-FCCTTCTCTTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATGTCTCCGAACGGqSIPRE5-RCCTGATGATGTCCGGAGAqSIPRE5-RCCTGATGATGTCCCATAACTTGTCqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATTGTAAATGTCCGAACCGqSIPRE5-RCCTGATGATGTCCGAACCGqSIPRE5-RCCTGATGATGATGTCGGTGAqSIPAA8-RAAGAATGATTCTTTTTTTGGGGAqSIPAA8-RAAGAATGATGCTCGTAT	qGA3ox2-F	GTAGACCAAAGGAACCCTCAAAT
qGA2ox1-FATTAAGATCCAAT AACACTTCGqGA2ox1-RTCTTGATTTCACACTATTTGCqGAST1-FCAACAACAGAGAAAT AACCAACqGAST1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAACGAAAAGAGAGACATTqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATGTCTCGAACCGqSIPRE5-RCCTGATGATTGTTCCCATAACTTGTCqSIPRE5-RCCTGATGATGTCTCGAACCGqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATGATGTCTCGAACCGqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATGATGTTCGGTGAqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCTGATTGTTAAATGTTCGGTGAqSIPAA-FCTGATTGTTAAATGATCCTTTTTTTTGGGGAqSIPAA-FCTGATTGTTAATGATGGTGGGTCGTATqSIPAA-FCTGATGGTGGGTCGTAT	qGA3ox2-R	GCCGAACAGATGAAAGTGCT
qGA2ox1-RTCTTGATTTCACACTATTTGCqGAST1-FCAACAAC AG AG AAAT AACCAACqGAST1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAACGAAAAGAGAGAGACATTqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE2-RCGACGATTACGAATTCAGGAAGqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-FCCTGATGATTGTCTCGAACCGqSIPRE5-RCCTGATTAGTTTGTCCGAACCGqSIPRE5-RCCTGATTGTTACATGTCTCGAACCGqSIPRE5-RCCTGATTGTTAAATGTTCGGTGAqSIPRE5-RCCTGATTGTTATCTTTTTTTGGGGAqSIPRA-FCACTTAATCCATCCATCCACTGTCTCGTGTAqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIPRA-FCTGATTGTTAAATGTTCGGTGAqSIPRA-FCTGATTGTTAAATGTTCGGTGAqSIPRA-FCTGATTGTTAAATGTTCGGTGAqSIPRA-FCTGATTGTTAAATGTTCGGTGAqSIPRA-FCTGATTGTTAAATGTTCGGTGAqSIPRA-FCTGATTGTTAAATGTTCGGTGAqSIPRA-FCTGATTGTTAAATGTTCGGTGAqSIPRA-FCTGATTGTTAAATGTTCGGTGAqSIPRA-FCTGATTGTTAAATGTTCGGTGAqSIPAA-FCTGATTGTTAAATGTTCGGTGAqSIPAA-FCTGATTGTTAAATGTTCGGTGAqSIPAA-FCTGATTGTTAATGTTTTTTTTTTTTTTTTTTTTTTTTTT	qGA2ox1-F	ATTAAGATCCAAT AACACTTCG
qGAST1-FCAACAACAGAGAGAAATAACCAACqGAST1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAACGAAAGAGAGAGACATTqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE2-RCGACGATTACGAATTTCAGGAAGqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE5-FCCTTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATGTCTCGAACCGqSIPRE5-RCTGATTGTTGTCCGAACCGqSIPRE5-RCCTGATGATTGTTCCGAACCGqSIExPA8-FCTGATTTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTTGGGGAAqKRP1-FGCGGTGATGGTGGGTCGTAT	qGA2ox1-R	TCTTGATTTCACACTATTTGC
qGAST1-RTTATACGATGTCTTTGAACACCqSIPRE1-FCGAAAGAACGAAAGGAGAGACATTqSIPRE1-RGCTAGAGCGACGATTGCGAAqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE2-RCGACGATTACGAATTTCAGGAAGqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-FCCTTGATGATGTCTCGAACCGqSIPRE5-RCTGATTTGTTAAATGTTCGGTGAqSIExPA8-FCTGATTTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTTTGGGGAAqKRP1-FGCGGTGATGGTGGGTCGTAT	qGAST1-F	CAACAACAGAGAAATAACCAAC
qSIPRE1-FCGAAAGAACGAAAAGAGAGACATTqSIPRE1-RGCTAGAGCGACGATTGCGAAqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE2-RCGACGATTACGAATTTCAGGAAGqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE4-RCACTTAATCCATCCACTTCTTGTGTAqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIExPA8-FCTGATTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTTGGGGAqKRP1-FGCGGTGATGGTGGGTCGTAT	qGAST1-R	TTATACGATGTCTTTGAACACC
qSIPRE1-RGCTAGAGCGACGATTGCGAAqSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE2-RCGACGATTACGAATTTCAGGAAGqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE4-RCACTTAATCCATCCACTTCTCTGTGTAqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIPRE5-RCCTGATTTGTTAAATGTTCGGTGAqSIExPA8-FAAGAATGATTCTTTTTTTGGGGAqSIPR-FGCGGTGATGGTGGGTCGTAT	qSlPRE1-F	CGAAAGAACGAAAAGAGAGACATT
qSIPRE2-FTATGTCTGGGAGAAGGTCAAGGAqSIPRE2-RCGACGATTACGAATTTCAGGAAGqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE4-RCACTTAATCCATCCACTTCTCTGTGTAqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIExPA8-FCTGATTTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTTGGGGAqKRP1-FGCGGTGATGGTGGGTCGTAT	qSlPRE1-R	GCTAGAGCGACGATTGCGAA
qSIPRE2-RCGACGATTACGAATTTCAGGAAGqSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE4-RCACTTAATCCATCCACTTCTCTGTGTAqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIExPA8-FCTGATTTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTGGGGAqKRP1-FGCGGTGATGGTGGGTCGTAT	qSlPRE2-F	TATGTCTGGGAGAAGGTCAAGGA
qSIPRE3-FTTCACACTCTCCATAGCAACACATqSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE4-RCACTTAATCCATCCACTTCTCTGTGTAqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIExPA8-FCTGATTTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTGGGGAqKRP1-FGCGGTGATGGTGGGGTCGTAT	qSlPRE2-R	CGACGATTACGAATTTCAGGAAG
qSIPRE3-RTCCTCACTTATCCTTGATCCTCCqSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE4-RCACTTAATCCATCCACTTCTCTGTGTAqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIExPA8-FCTGATTTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTGGGGAqKRP1-FGCGGTGATGGTGGGTCGTAT	qSlPRE3-F	TTCACACTCTCCATAGCAACACAT
qSIPRE4-FATCAAATCGCTGATCTTGTTTCCqSIPRE4-RCACTTAATCCATCCACTTCTCTGTGTAqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIExPA8-FCTGATTTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTGGGGAqKRP1-FGCGGTGATGGTGGGGTCGTAT	qSlPRE3-R	TCCTCACTTATCCTTGATCCTCC
qSIPRE4-RCACTTAATCCATCCACTTCTCTGTGTAqSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATTGTCTCGAACCGqSIExPA8-FCTGATTTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTGGGGAqKRP1-FGCGGTGATGGTGGGTCGTAT	qSlPRE4-F	ATCAAATCGCTGATCTTGTTTCC
qSIPRE5-FCCTTCTCTCTTTGTCCATAACTTGTCqSIPRE5-RCCTGATGATGTCTCGAACCGqSIExPA8-FCTGATTTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTGGGGAqKRP1-FGCGGTGATGGTGGGGTCGTAT	qSlPRE4-R	CACTTAATCCATCCACTTCTCTGTGTA
qSIPRE5-RCCTGATGATTGTCTCGAACCGqSIExPA8-FCTGATTTGTTAAATGTTCGGTGAqSIExPA8-RAAGAATGATTCTTTTTTGGGGAqKRP1-FGCGGTGATGGTGGGTCGTAT	qSlPRE5-F	CCTTCTCTCTTTGTCCATAACTTGTC
qSlExPA8-FCTGATTTGTTAAATGTTCGGTGAqSlExPA8-RAAGAATGATTCTTTTTTGGGGAqKRP1-FGCGGTGATGGTGGGTCGTAT	qSlPRE5-R	CCTGATGATTGTCTCGAACCG
qSlExPA8-R AAGAATGATTCTTTTTTGGGGA qKRP1-F GCGGTGATGGTGGGTCGTAT	qSlExPA8-F	CTGATTTGTTAAATGTTCGGTGA
<i>qKRP1-F</i> GCGGTGATGGTGGGTCGTAT	qSlExPA8-R	AAGAATGATTCTTTTTTGGGGA
	qKRP1-F	GCGGTGATGGTGGGTCGTAT
<i>qKRP1-R</i> CGTCCTTAACACCCTTTCCCTC	qKRP1-R	CGTCCTTAACACCCTTTCCCTC
<i>qKRP2-F</i> TTCACAAACCACCCACCCC	qKRP2-F	TTCACAAACCACCCACCCC
<i>qKRP2-R</i> TGACCATTTCGTCCACCTCC	qKRP2-R	TGACCATTTCGTCCACCTCC
<i>qKRP3-F</i> GGCTGGAGAAACCCTTGG	qKRP3-F	GGCTGGAGAAACCCTTGG
<i>qKRP3-R</i> CCCTCAAACTCCGATTCTGTC	qKRP3-R	CCCTCAAACTCCGATTCTGTC

Table S2. PCR primers used in this study

qKRP4-F	CACAAGGAAGAGGAAGAAGCG		
qKRP4-R	CCAAAACCAGATGCTGAAACG		
CycA3;1-F	CTAAGAAAAGAGCAGCAGAAGCA		
CycA3;1-R	GATTCCTTATCTTTTTCAGCAACAG		
CycB1;1-F	GTATCTCGCCCCGTAACAAG		
CycB1;1-R	TCTCCTCAGGTTTTGGCTTT		
CycD2;1-F	CTGCCAAAGCCTCAAGCG		
CycD2;1-R	CAGTGGAGCTAGTGTCATTCGC		
qSlJAZ2-F	TAGCCAACAAACAGAACCCCA		
qSlJAZ2-R	AAGTGAATTCCGTCTCGCGAT		
qSlJAZ10-F	GGAACTCACTCTTTCTCCTAGCAAC		
qSlJAZ10-R	TGGTGATGAAGGCTCAGACAGCTT		
qSlJAZ11-F	GGAGTTTAGGCTTATGCCACCTTC		
qSlJAZ11-R	GGCTCAGATATTGGTGACAGACTC		
qSlGID1-A-F	GCGGTGTTGTTGAATGAGAATC		
qSlGID1-A-R	GTCTTGTGCAGATCAGCTCCC		
qSlGID1-B-F	GGTGTTTATTCATTTGATGTTGTTG		
qSlGID1-B-R	AGAATGTGTCGTAAATAGCACTGTT		
qSlGID1-C-F	GCCTACTTAGCCGTGTCTATCG		
qSlGID1-C-R	AGTGTGCAAAACTTCCACCATG		
SlUPA-like-F	GGGTCTTCTTCTATGACTTCTGCT		
SlUPA-like-R	TTTCATCTTTGGCTACTAACTTGC		
qSlPI-I-F	CTTCTTGCAACTTCCTTTG		
qSlPI-I-R	TGTTTTCCTTCGCACATC		
qSlPI-II-F	ATGCTTGCACCTTTAATTGTGATC		
qSlPI-II-R	TAATAGCAACCCTTGTACCCTGTG		
qSlNCED1-F	CCCGATTTGGTATTCTGGATAAGTA		
qSlNCED1-R	GAGACGGATTTCGGATAAAACACT		
qSnRK2.3-F	ATCATTACCTCACTGGAAGCTTGGAC		
qSnRK2.3-R	AAACAGTGGATACCAAAAGATCGCC		
CAT1-F	AAATGGGTTGAGTCTTTATCCGA		
CAT1-R	TCATTGATTTTTCACATTGTAGGCT		
GME2-F	CCATCACATTCCAGGACCAGA		
GME2-R	CGTAATCCTCAACCCATCCTTC		
LEA-F	TATTGGTAAAGATTGGGACATTGA		
LEA-R	TGTCTTCTTGTTTGTCACCGTTC		
Xcc-F	TCGCCTACCGAGAAATCCC		

Figure S1 | Adaxial and abaxial pavement cell of leaves were detected by hand-sliced method and magnification was $40 \times$ The adaxial epidermal cell of AC⁺⁺ (A) and *SlUPA-L*-OE lines (B). The abaxial epidermal cell of AC⁺⁺ (C) and *SlUPA-L*-OE lines (D).



Figure S2 | Phylogenetic analysis of *KRPs* in tomato and Arabidopsis.



Figure S3 | The leaf veins displayed different phenotypes in control and *SlUPA-L*-OE lines.

The phenotypes of leaf vein from AC^{++} (A) and of transgenic lines (B). Their magnification was $40 \times$ (C). The phenotypes of leaf vein of AC^{++} and the magnification was $80 \times$ PM, Phloem; XM, Xylem; PT, Palisade Tissues; ST, Spongy Tissues; PC, Parenchyma Cells.



80×

Figure S4 | The auxiliary buds further from apex of plants was repressed in *SlUPA-L*-OE lines.











Figure S7 | Ddetection of PCR products of *Xcc* genomes after 8 days post-inoculation by agarose gel electrophoresis.



Figure S8 | AC⁺⁺ and *SlUPA-L*-OE1 showed sick phenotypes when exposed to disease plants after 10 days. The phenotypes of AC⁺⁺ not exposed to disease plants (A) and exposed to disease plants (B) for 10 days. The phenotypes of *SlUPA-L*-OE1 not exposed to disease plants (C) and exposed to disease plants (D) for 10 days.

