

Supplementary Materials

Enhanced Expression of Thaumatin-like Protein Gene (*LeTLP1*) Endows Resistance to *Trichoderma atroviride* in *Lentinula edodes*

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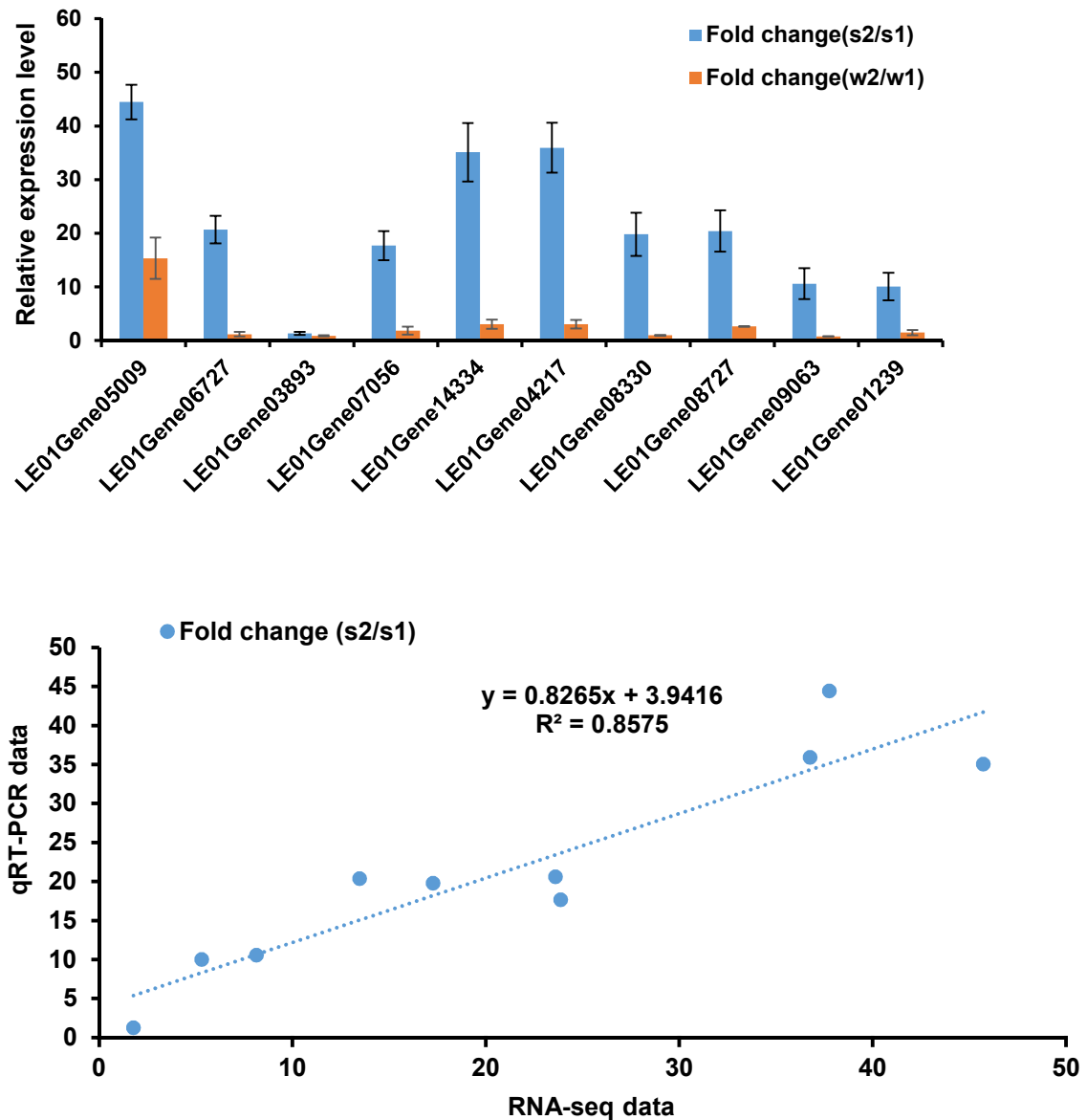


Figure S1. qRT-PCR results of ten selected genes and correlation between transcriptome data and real time PCR results. The resistant and susceptible *L. edodes* mycelia samples (s2, w2) were harvested after the *T. atrovire* strain 92-1 had contact with the *L. edodes* strains of 24 hours, respectively. As control, the Y3334 strain and Y55 strain of *L. edodes* was confronted with itself, respectively. The mycelia samples of resistant and susceptible *L. edodes* (s1, w1) were harvested after contact for 24 hours, respectively. s1 represents Y3334 vs. Y3334; s2 represents Y3334 vs. *T. atrovire* strain 92-1; w1 represents Y55 vs. Y55; w2 represents Y55 vs. *T. atrovire* strain 92-1.

<i>LeTLP1</i>	---MMKNSIIISALFSTFVAVSARTFTVKNNCKYTVWPAIFTDMNVGTDKPSMPTGWEEA	57
<i>LeTLP (Y55)</i>	---MMKNSIIISALFSTFVAVSARTFTVKNNCKYTVWPAIFTDMNVGTDKPSMPTGWEEA	57
<i>L. edodes</i>	MKFTTAASLVSVGLV--STVDAARTFTVYNGCPFTIWPAMFTGVNQATASPAYTTGWAAN	58
<i>LeTLP1</i>	PGNTSTFTVPDDWQSGRIWGR*TCDFSK-PNASSCATGGCNGGLLCDEHSGTGVPPTVA	116
<i>LeTLP (Y55)</i>	PGNTSTFTVPDDWQSGRIWGR*TCDFSK-PNASSCATGGCNGGLLCDEHSGTGVPPTVA	116
<i>L. edodes</i>	AYTAVSFSPDNWQAGRIWARRDCDFSVNPGPNSCLDGGCNGGLVCDPTTGTGVPASLA	118
<i>LeTLP1</i>	+EWTLGKNGSPDNYDVSMDG*FNIPMSVVP*TAGCQAIDC*NTDLNPNCPAQLQL-KDASGTV	175
<i>LeTLP (Y55)</i>	EWTLGKNGSPDNYDVSMDG*FNIPMSVVP*TAGCQAIDC*NTDLNPNCPAQLQL-KDASGTV	175
<i>L. edodes</i>	EFTLSGAGGLDYFDISFVDGYNLPISITNNVNCPAPICAVDLGPNCAPLAGPFDSTGFP	178
<i>LeTLP1</i>	* * *VGCKSACDANLDGDPQNSPNCCSGSHNVPATCPPSGVQFYDYFKNGCKNAYAYAYDESSK	235
<i>LeTLP (Y55)</i>	* * *VGCKSACDANLDGDPQNSPNCCSGSHNVPATCPPSGVQFYDYFKNGCKNAYAYAYDESSK	235
<i>L. edodes</i>	* * *VGCKSACDANLDGQQNSPNCCSGQYDTPATCPVSGVEYYTYFKDACPDAYAYAYDESSE	238
<i>LeTLP1</i>	TALW*TCSTQNADYAVTF*CP--	255
<i>LeTLP (Y55)</i>	TALW*TCSTKNADYAVTF*CP--	255
<i>L. edodes</i>	SALWTCADSLNADY*ITFCPPA	260

Figure S2. Alignment of the amino acid sequences of *LeTLP1* (Y3334), *LeTLP* (Y55), and *L. edodes* TLP(GenBank: AB244759). Dashes in the sequence represent the introduction of a single amino acid gap. Conserved Cys are indicated with an asterisk, and conserved acidic amino acids in the acidic cleft are indicated with a +.

Table S1 Cultivated and wild strains of *Lentinula edodes* used in this study.

Strain number	Strain name	Origin	Main agronomic traits
c2	S605	Shanghai	S,F,M and MLa
c6	Cr04	Sanming-1	S, F, MH and Ea
c9	L12	Sanming	W, D, ML
c10	L135	Sanming	S, F or D, L and La
c20	L856	Sanming	S, F or D, ML and Ea
c23	S602	Shanghai	S, F, M and La
c27	Guangxiang-51	Guangdong	W, D, ML
c28	Hunong-1	Shanghai	W, D, M
c31	Huaxiang-8	Wuhan	S, F, M and Ea
c42	Qingke-20	Qingyuan	S, D, ML and MLa
c47	Qiu-6	Wuhan	S, D, M and Ea
c48	Rifeng-34	Henan	W, D, L
c49	Senyuan-10	Yichang	W or S, D, L and MLa
c50	Senyuan-1	Yichang	W, D, L
c51	Senyuan-2	Yichang	W or S, D, L and La
c64	430	Wuhan	S, D, ML and Ea
c67	908	Henan	S, D, ML and MLa
c82	868	Zhejiang	S, F, ML and Ea
c85	Xiangjiu	Guangdong	W, D, M
c87	Yuhua-2	Biyang	S, D, ML and Ea
c88	Yuhua-4	Biyang	S, D, ML and Ea
Y1	EFISAAS0229	Jingdong	-
Y5	EFISAAS0351	Jingdong	-
Y7	00167	Yaoan	-
Y8	00168	Xianggelila	-
Y11	ACCC50786	Huangshan	-
Y14	GAN059	Kang couty	-
Y29	HUB039	Shennongjia	-
Y30	HUB040	Shennongjia	-
Y37	HUB091	Changyang	-
Y39	HN002	Chenzhou	-
Y51	SHX044	Liuba	-
Y55	NO.41	Xiushui	-
Y70	LeQc743s	Qingchuan	-
Y76	LeWs735	Dechang	-
Y78	LHLy14	Huili	-
Y79	LHLy217	Huili	-
Y84	LMLH14	Mianning	-
Y88	LMLH36	Mianning	-
Y89	LMLH52	Mianning	-

Y91	LMLH59	Mianning	-
Y94	LMLH116	Mianning	-
Y100	LMLHA18	Mianning	-
Y104	LMLHA36	Mianning	-
Y110	LMLHL22	Mianning	-
Y111	LMLHL26	Mianning	-
Y113	LMLHL210	Mianning	-
Y118	LMYP62	Miyi	-
Y121	LPG82	Puge	-
Y234	YAASM234	Nanhua	-
Y358	YAASM358	Chuxiong	-
Y366	YAASM366	Chuxiong	-
Y1515	YAASM1515	Yangbi	-
Y1518	YAASM1518	Yangbi	-
Y3334	YAASM3334	Longling	-
Y3353	YAASM3353	Jingdong	-

S for sawdust cultivation; W for woodlog cultivation; W or S both for sawdust and wood log cultivations; F (fresh fruiting body production type), fruiting body mostly sold in fresh form in the market; D (dried fruiting body production type), fruiting body mostly sold in dried form in the market; For D, fruiting body sold both in fresh and dried forms in the market; H (high temperature type), fruiting body formation at 8–32°C; MH (middle-high temperature type), fruiting body formation at 15–28°C; M (medium-temperature type), fruiting body formation at 10–25°C; ML (middle-low temperature type), fruiting body formation at 8–23°C; L (low temperature type), fruiting body formation at 5–20°C; Ea (early maturing type), duration from inoculation to fruiting body formation is 65–75 days; MLa (middle-late maturing type), duration from inoculation to fruiting body formation is 90–150 days; La (late maturing type), duration from inoculation to fruiting body formation is 160–200 days . . .

Table S2 Primers used for real time quantitative PCR.

Gene numbers	Gene name	Forward primer sequence(5'-3')	Reverse primer sequence (5'-3')
LE01Gene01050.t2	Actin-1	ACCACCGCTGAGC GTGAAAT	CAAGGAAGGCA GGCTGGAAG
LE01Gene05009	Thaumatococcus-like protein	TGACTTCTCGAAG CCCAACG	TTCCGAGTGTCC ATTCAGCAAC
LE01Gene06727	Oligopeptide transporter 3	GAGAAACCACTC GCACAGAA	ATCCAAAGCAGC TTCCGACT
LE01Gene03893	Spore germination protein	GTATGGGCAATGG CGTTCTG	TGAGCAGCGATG GTTTGACA
LE01Gene07056	lcc-3	CGACACTGATTAA CGGGAACG	CGATGGAGAAG CCGTGGAA
LE01Gene14334	Cytochrome b561 and DOMON domain- containing protein	GCGGGTGCGGATT ATGTTT	TTGAAAGCCGTC GCCTCTAA
LE01Gene04217	Probable peptidoglycan endopeptidase	AATGAGATCGCCA CCAAGAAC	GTGCCAGGGATG CAAAGCT
LE01Gene08330	lcc-1	ACGGGTAACAAA GGCGACAA	CAAGGGTCCAC GCAATCCA
LE01Gene08727	Oligopeptide transporter 6	TTCGATAGCCCT CGCCTCAT	AGCGCCAAAG CAAGATAGACC
LE01Gene09063	Oligopeptide transporter 2	GTCTTGGAAG GTAGCGAGG	CGAGCTCCCGA ACTATCTGTG
LE01Gene01239	Oligopeptide transporter 3	GCTCAATCCTTG GACATTTCGT	GGCGTCCATTC CCATACCAA