Supplementary Table 1 Primers used in the PCR procedure

	Forward	Reverse
For gene cloning in *L. tsingtauense*		
LtIAA2	ATGTCTCCTCCCCAAGAGC	TTACTCCCATGGAACATCAC
LtIAA6	ATGGAAGGAAAGCTTCTTAG	TCAGCACTCAGTTGCTGTT
LtIAA11	ATGAAAGGGGTTTCTGTTTCTGG	TTAGATGTGTTTGCTTCCTACTGC
LtIAA16	ATGTCCGTGGAGACAGCG	TCACCTGGGGTTCAAACC
LtIAA17	ATGAAGCTTGTATCAGCTGAGATTG	TCAGTAATCCAGAGATCCCACAGA
LtARF12	ATGCCTTCGTCGGTTTT	TCAATCTCCTTGTTTCCCC
LtARF22	ATGCAGCCGCCTGCTCAA	TCACTCCAAATGTTCATATGACCC
For construction of silencing expression vector		
TRV- *LtIAA16*	cctccatggggatccggtaccGGGGGCTATGAGCAGTTGC	ggcctcgagacgcgtgagctcTCACCTGGGGTTCAAACCATC
For construction of overexpression vector		
OE-*LtIAA16*	cgactctagtctagaaagcttATGTCCGTGGAGACAGCGAA	cactagtatttaaatgtcgacCCTGGGGTTCAAACCATCATG
For yeast vector construction		
AD- LtIAA16	gccatggaggccagtgaattcATGTCCGTGGAGACAGCGAATTGAGCT	attcatctgcagctcgagctcTCACCTGGGGTTCAAACCATC
BD- LtARF12-F	aggacctgcatatggccatggATGCCTTCGTCGGTTTTGTCA	atgcggccgctgcaggtcgacTCAATCTCCTTGTTTCCCCATG
BD- LtIAA2-F	aggacctgcatatggccatggATGTCCGTGGAGACAGCGAA	atgcggccgctgcaggtcgacTCACCTGGGGTTCAAACCATC
BD- LtIAA6-F	aggacctgcatatggccatggATGGAAGGAAAGCTTCTTAGAAG	atgcggccgctgcaggtcgacTCAGCACTCAGTTGCTGTTCTCTT
BD- LtIAA17-F	aggacctgcatatggccatgg ATGAAGCTTGTATCAGCTGAGATTG	atgcggccgctgcaggtcgacTCAGTAATCCAGAGATCCCACAGA
BD- LtIAA11-F	aggacctgcatatggccatggATGAAAGGGGTTTCTGTTTCTG	atgcggccgctgcaggtcgacTTAGATGTGTTTGCTTCCTACTGC
BD- LtARF22-F	aggacctgcatatggccatggATGCAGCCGCCTGCTCAA	atgcggccgctgcaggtcgacTCACTCCAAATGTTCATATGACCC
For LCA vector construction		
nLUC- LtIAA16-F	gagaacacgggggacgagctcATGTCCGTGGAGACAGCGAA	cgcgtacgagatctggtcgacCCTGGGGTTCAAACCATCATG
cLUC- LtIAA6-F	tacgcgtcccggggcggtaccATGGAAGGAAAGCTTCTTAGAAGAGA	cagtcgacgcgttgtggatccTCAGCACTCAGTTGCTGTTCTCTT
cLUC- LtIAA17-F	tacgcgtcccggggcggtaccATGAAGCTTGTATCAGCTGAGAT	cagtcgacgcgttgtggatccTCAGTAATCCAGAGATCCCACAGA
cLUC- LtIAA11-F	tacgcgtcccggggcggtaccATGAAAGGGGTTTCTGTTTCTGG	cagtcgacgcgttgtggatccTTAGATGTGTTTGCTTCCTACTGCA
cLUC- LtARF22-F	tacgcgtcccggggcggtaccATGCAGCCGCCTGCTCAA	cagtcgacgcgttgtggatccTCACTCCAAATGTTCATATGACCC
For His vector construction		
His-LtIAA16	atgggtcgcggatccgaattcATGTCCGTGGAGACAGCGAA	ctcgagtgcggccgcaagcttTCACCTGGGGTTCAAACCATC
For GST vector construction		
GST-LtIAA6	ccgcgtggatccccggaattcATGAAAGGGGTTTCTGTTTCTG	gatgcggccgctcgagtcgacTTAGATGTGTTTGCTTCCTACTGCA
GST-LtIAA17	ccgcgtggatccccggaattcATGAAGCTTGTATCAGCTGAGATTG	gatgcggccgctcgagtcgacTCAGTAATCCAGAGATCCCACAGA

GST-LtIAA11	ccgcgtggatccccggaattcATGAAGCTTGTATCAGCTGAGATTG	gatgcggccgctcgagtcgacTTAGATGTGTTTGCTTCCTACTGC
GST-LtARF22	ccgcgtggatccccggaattcATGCAGCCGCCTGCTCAA	gatgcggccgctcgagtcgacTCACTCCAAATGTTCATATGACCC
For ITS detection of fungi		
QDAU 0920	ATATGCTTAAGTTCAGCGGGTATT	GGAGGGATCATTACCGAGTTTAC
QNYL14	GTAACAAGGTTTCCGTAGGTG	TGATATGCTTAAGTTCAGC
QNYL15	TAACAAGGTTTCCGTAGGTGAA	TGATATGCTTAAGTTCAGCG
QNYL16	TAACAAGGTCTCCGTTGGTGA	TGATATGCTTAAGTTCAGCGG
QNYL17	TAACAAGGTTTCCGTAGGTGA	TGATATGCTTAAGTTCAGCGG

Supplemental Table 2 Primers used in the RT-qPCR procedure

	Forward	Reverse
For RT-qPCR in *L. tsingtauense*		
qRT-*LtIAA6*	GCTTTGATTCGTTTATTTCTCT	CTTGGTGTACTTCAGAGCGTAG
qRT- *LtARF12*	CTAGATCCTGTGGATGTG	ATCAGCACATAATCCGCC
qRT- *LtIAA17*	GACGCGGTGGTGA	GGAGCCGCGCTTCTT
qRT- *LtIAA11*	GCTTTGATTCGTTTATTTC	CTTGGTGTACTTCAGAGCGTAG
qRT- *LtIAA16*	CTAGCTGCATTTGCAA	CAAGTCGGTTGCATCCAC
qRT- *LtGAPDH*	GGTGCGGATTATGTGGTGGA	GAGGTGTACTCGTGCTCGTT
QDAU 0920	ATATGCTTAAGTTCAGCGGGTATT	GGAGGGATCATTACCGAGTTTAC

Supplemental Table 3 Details of bacterial 16S sequencing

Sample ID	Raw Reads	Clean Reads	Denoised Reads	Merged Reads	Non-chimeric Reads
BSLA1	79756	68230	66847	65475	65416
BSLA2	98438	81291	80409	80024	79688
BSLA3	79843	67730	65666	63415	63338
BSMA1	80342	70625	70072	69229	68353
BSMA2	80117	70283	69418	68208	68005
BSMA3	80075	68426	66638	64648	64630
BSHA1	80325	70404	69517	68155	68141
BSHA2	80105	69854	69181	68144	67727
BSHA3	67339	58562	58140	57560	57338
RSLA1	79975	67192	66339	63693	63055
RSLA2	79951	64512	63297	60641	60224
RSLA3	79847	65367	64048	61380	61326
RSMA1	80153	68010	66486	63385	63210
RSMA2	80190	68950	67532	64551	64540
RSMA3	80301	68267	66804	63556	63426
RSHA1	79625	65104	64137	61516	61162
RSHA2	101314	82494	81451	77666	77263
RSHA3	80153	65066	64219	61537	61282

Supplemental Table 4 Details of fungal ITS sequencing

Sample ID	Raw Reads	Clean Reads	Denoised Reads	Merged Reads	Non-chimeric Reads
BSLA1	130461	119195	115200	107889	92023
BSLA2	63732	57206	54320	49452	42344
BSLA3	67933	61151	58183	53180	46427
BSMA1	78025	70063	66253	59135	49102
BSMA2	83351	74236	70103	61937	52529
BSMA3	81525	73136	69363	61440	52999
BSHA1	89724	80377	75614	65844	55144
BSHA2	79761	73661	69843	61230	51600
BSHA3	114145	102173	97066	86764	72114
RSLA1	83329	71384	66845	59109	51936
RSLA2	96334	83488	78914	70453	60688
RSLA3	80049	68873	64510	56747	49858
RSMA1	80135	68618	64903	57231	50918
RSMA2	79936	68796	65858	59449	52614
RSMA3	123771	107570	101949	86596	73289
RSHA1	94749	81813	76810	67934	58287
RSHA2	110345	96820	91549	82569	70890
RSHA3	80051	69784	65254	57045	49362

Supplemental Table 5 The ITS sequences of isolated 13 fungi

Name	Sequence
QNYL1	TCTTCCGTAGGTGAACCTGCGGAAGGATCATTACTGTGATTTAGTACTACACTGCGTGAGCGGAAC GAAAACAAAAACACCTAAAATGTGGAATATAGCATATAGTCGACAAGAGAAATCTACGAAAAACA AACAAAACTTTCAACAACGGATCTCTTGGTTCTCGCATCGATGAAGAGCGCAGCGAAATGCGATAC CTAGTGTGAATTGCAGCCATCGTGAATCATCGAGTTCTTGAACGCACATTGCGCCCCTCGGCATTCC GGGGGGCATGCCTGTTTGAGCGTCGTTTCCATCTTGCGCGTGCGCAGAGTTGGGGGAGCGGAGCG GACGACGTGTAAAGAGCGTCGGAGCTGCGACTCGCCTGAAAGGGAGCGAAGCTGGCCGAGCGAA CTAGACTTTTTTTCAGGGACGCTTGGCGGCCGAGAGCGAGTGTTGCGAGACAACAAAAAGCTCGA CCTCAAATCAGGTAGGAATACCCGCTGAACTTAAGCATATCAATAAGCGGAGGAAA
QNYL2	GGAGGGATCATTAACGAGTTTTCAACTCCCAACCATAAGTGAACATACCAATCGTTGCTTCGGCGG ACCCGACCCGGCGTCCGGACGACCGTGGGCCGCCCGCGACCCGGACCCAGGCGGCCGCCGGGGA CCCCAAACTCTGTATTCTTTACGTCTTCTGAATCCGCCGCAAGGCAAAACAAATGAATCAAAACTTT CAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAAT TGCAGAATTCAGTGAATCATYGAATCTTTGAACGCACATTGCGCCCGCCAGCATTCTGGCGGGCAT GCCTGTTCGAGCGTCATTTCACCCCTCGACCCCGCGCTTAGTGGGGTCGGCGTTGGGGGACGGCAC TACCCCGCCGCCCCTGAAATGAAGTGGCGGCCCGTCCGCGGCGACCTCTGCGTAGTAACTCAACGC GCACCGGAACCCCGACGTGGCCACGCCGTAAAACACCCAACTTCTGAACGTTGACCTCGAATCAG GTAGGACTACCCGCTGAACTTAAGCATATCAAAAGCCGGAGGAA
QNYL3	TACTCCCAAACCCAATGTGAACGTTACCAAACTGTTGCCTCGGCGGGAACTCATGCCCCGGGTGCG TCGCAGCCCCGGACCAAGGCGCCCGCCGGAGGACCAACCAAAACTCTTTTTGTATACCCCCTCGCG GGTTTTTTATAATCTGAGCCTTCTCGGCGCCTCTCGTAGGCGTTTCGAAAATGAATCAAAACTTTCA ACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTG CAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCC TGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGTCGGCGTTGGGGATCGGCCCTCCTCT TGCGGGGGCCGTCTCCGAAATACAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCAC ACTCGCATCGGGAGCGCGGCGCGTCCACAGCCGTTAAACACCCAACTTCTGAAATGTTGACCTCGG ATCAGGTAGGAATACCCGCTGAACTTAAGCATATCAAAAGGCCGGAAGAA
QNYL4	TCTCGTAAGGGGGGCCTGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCAATGTGAACGT TACCAAACTGTTGCCTCGGCGGGATCTCTGCCCCGGGTGCGTCGCAGCCCCGGACCAAGGCGCCC GCCGGAGGACCAACCAAAACTCTTATTGTATACCCCCTCGCGGGTTTTTTTTATAATCTGAGCCTTCT CGGCGCCTCTCGTAGGCGTTTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGC ATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAAT CTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCT CGAACCCCTCCGGGGGGTCGGCGTTGGGGATCGGCCTTCCTTCACCGGGGGCCGTCTCCGAAATAC AGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCATCGGGAGCGCGGCGC GTCCACAGCCGTTAAACACCCCAAACTTCTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCT GAACTTAAGCATATCAAA

QNYL5	CTTCCCGTAAGGGTGACCTGCGGAAGGATCATTAATTATGTTAAAGCGCCTTACCTTAGGGTTTCCT CTGGGGTAAGTGATTGCTTCTACACTGTGAAAATTTGGCTGAGAGACTCAGACTGGTCATGGGTAG ACCTATCTGGGGTTTGATCGATGCCACTCCTGGTTTCAGGAGCACCCTTCATAATAAACCTAGAAAT TCAGTATTATAAAGTTTAATAAAAAACAACTTTTAACAATGGATCTCTTGGTTCTCGCATCGATGAAG AACGTAGCAAAGTGCGATAACTAGTGTGAATTGCATATTCAGTGAATCATCGAGTCTTTGAACGCAG CTTGCACTCTATGGTTTTTCTATAGAGTACGCCTGCTTCAGTATCATCACAAACCCACACATAACATT TGTTTATGTGGTAATGGGTCGCATCGCTGTTTTATTACAGTGAGCACCTAAAATGTGTGTGATTTTCT GTCTGGCTTGCTAGGCAGGAATATTACGCTGGTCTCAGGATCTTTTTCTTTGGTTCGCCCAGGAAGT AAAGTACAAGAGTATAATCCAGCAACTTTCAAACTATGATCTGAAGTCAGGTGGGATTACCCGCTG AACTTAAGCATATCAAAAGGCGGAGGAATAG
QNYL6	ATATGCTTAAGTTCAGCGGGTATTCCTACCTGATCCGAGGTCAACATTTCAGAAGTTTGGGGTGTTT TACGGCTGTGGCCGCGCCGCGCTCCCGGTGCGAGTGTGCAAACTACTGCGCAGGAGAGGCTGCGG CGAGACCGCCACTGTATTTCGGGGGCGGCCCGGTGAGGGGCCGATCCCCAACGCCGACCCCCCGG AGGGGTTCGAGGGTTGAAATGACGCTCGGACAGGCATGCCCGCCAGAATACTGGCGGGCGCAATG TGCGTTCAAAGATTCGATGATTCACTGAATTCTGCAATTCACATTACTTATCGCATTTCGCTGCGTTC TTCATCGATGCCAGAACCAAGAGATCCGTTGTTGAAAGTTTTGATTCATTTTCGAGACGCCCGCTAG GGTCGCCGAGAAAGGCTCAGAGCAAAAATAAAACAGAGCCGCGACGGGAGCCGCGACGGAGAG AAAAAAGAGTTTGGAGTTGGTCCTCCGGCGGGCGCCATGGGATCCGGGGCTGCGACGCGCCCGGG GCAAGAGAATCCCGCCGAGGCAACAGATTGGTAACGTTCACATTGGGGTTTGGGAGTTGTAAACTC GGTAATGATCCCTCC
QNYL7	GGGGGACTGCGGAAGGATCATTACCGAGTGTAGGGTTCCTAGCGAGCCCAACCTCCCACCCGTGTT TACTGTACCTTAGTTGCTTCGGCGGGCCCGCCATTCATGGCCGCCGGGGGCTCTCAGCCCCGGGCC CGCGCCCGCCGGAGACACCACGAACTCTGTCTGATCTAGTGAAGTCTGAGTTGATTGTATCGCAAT CAGTTAAAACTTTCAACAATGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGAT AACTAGTGTGAATTGCAGAATTCCGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTAT TCCGGGGGGCATGCCTGTCCGAGCGTCATTGCTGCCCATCAAGCACGGCTTGTGTGTTGGGTCGTC GTCCCCTCTCCGGGGGGGACGGGCCCCAAAGGCAGCGGCGGCACCGCGTCCGATCCTCGAGCGTA TGGGGCTTTGTCACCCGCTCTGTAGGCCCGGCCGGCGCTTGCCGAACGCAAATCAATCTTTTTCCA GGTTGACCTCGGATCAGGTAGGGATACCCGCTGAACTTAAGCATATCAAAAGGCG
QNYL8	ATATGCTTAAGTTCAGCGGGTATCCCTACCTGATCCGAGGTCAACCTGGAAAAAATGGTTGGAAAA CGTCGGCAGGCGCCGGCCAATCCTACAGAGCATGTGACAAAGCCCCATACGCTCGAGGATCGGAC GCGGTGCCGCCGCTGCCTTTCGGGCCCGTCCCCCCGGAGAGGGGGACGGCGACCCAACACACAAG CCGGGCTTGAGGGCAGCAATGACGCTCGGACAGGCATGCCCCCCGGAATACCAGGGGGCGCAATG TGCGTTCAAAGACTCGATGATTCACTGAATTCTGCAATTCACATTAGTTATCGCATTTCGCTGCGTTC TTCATCGATGCCGGAACCAAGAGATCCATTGTTGAAAGTTTTAACTGATTGCATTCAATCAACTCAG ACTGCACGCTTTCAGACAGTGTTCGTGTTGGGGTCTCCGGCGGGCACGGGCCCGGGGGGCAAAGG CGCCCCCCCGGCGGCCGACAAGCGGCGGGCCCGCCGAAGCAACAGGGTATAATAGACACGGATGG GAGGTTGGGCCCAAAGGACCCGCACTCGGTAATGATCCTTCCGCA

QNYL9	GGAAGGATCATTACCGAGTGCGGGTCCTTTGGGCCCAACCTCCCATCCGTGTCTATTATACCCTGTT GCTTCGGCGGGCCCGCCGCTTGTCGGCCGCCGGGGGGGCGCCTTTGCCCCCCGGGCCCGTGCCCG CCGGAGACCCCAACACGAACACTGTCTGAAAGCGTGCAGTCTGAGTTGATTGAATGCAATCAGTTA AAACTTTCAACAATGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGATAACTAA TGTGAATTGCAGAATTCAGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTATTCCGGG GGGCATGCCTGTCCGAGCGTCATTGCTGCCCTCAAGCCCGGCTTGTGTGTTGGGTCGCCGTCCCCC TCTCCGGGGGGACGGGCCCGAAAGGCAGCGGCGGCACCGCGTCCGATCCTCGAGCGTATGGGGCT TTGTCACATGCTCTGTAGGATTGGCCGGCGCCTGCCGACGTTTTCCAACCATTTTTTCCAGGTTGAC CTCGGATCAGGTAGGGATACCCGCTGAACTTAAGCATATC
QNYL10	ATATGCTTAAGTTCAGCGGGTAACTCCTACCTGATCCGAGGTCAACCATAATGGAAAATGTGGTGGT GACCAACCCCCGCAGGTCCTTCCCGAGCGAGTGACAGAGCCCCATACGCTCGAGGACCAGACGGA CGTCGCCGCTGCCTTTCGGGCAGGTCCCCGGGGGGGACCACACCCAACACACAAGCCGTGCTTGAG GGCAGAAATGACGCTCGGACAGGCATGCCCCCCGGAATGCCAGGGGGCGCAATGTGCGTTCAAAG ATTCGATGATTCACGGAATTCTGCAATTCACATTACTTATCGCATTTCGCTGCGTTCTTCATCGATGCC GGAACCAAGAGATCCATTGTTGAAAGTTTTGACAATTTTCATAGTACTCAGACAGCCCTTCTTCATC AGGGTTCACGAAGCGCTTCGGCGGGCGCGGGCCCGGGGACGGGTGTCCCCCGGCGACCAGGGAG CCCCAGTGGGCCCGCCAAAGCAACAGGTGTAGAGAGACAAGGGTGGGAGGTTGGGCCGCGAGGG CCCGCACTCGGTAATGATCCTTCCG
QNYL11	GGAAGGATCATTACTGAGTGCGGGCTGCCTCCGGGCGCCCAACCTCCCACCCGTGAATACCTAACA CTGTTGCTTCGGCGGGGAACCCCCTCGGGGGCGAGCCGCCGGGGACTACTGAACTTCATGCCTGA GAGTGATGCAGTCTGAGTCTGAATATAAAATCAGTCAAAACTTTCAACAATGGATCTCTTGGTTCCG GCATCGATGAAGAACGCAGCGAACTGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGA GTCTTTGAACGCACATTGCGCCCCCTGGCATTCCGGGGGGCATGCCTGTCCGAGCGTCATTGCTGC CCATCAAGCCCGGCTTGTGTGTTGGGTCGTCGTCCCCCCCGGGGGACGGGCCCGAAAGGCAGCGG CGGCACCGTGTCCGGTCCTCGAGCGTATGGGGCTTTGTCACCCGCTCGACTAGGGCCGGCCGGGCG CCAGCCGACGTCTCCAACCATTTTTCTTCAGGTTGACCTCGGATCAGGTAGGGATACCCGCTGAACT TAAGCATATCAAAAAGNCGGAGGA
QNYL12	ATATGCTTAAGTTCAGCGGGTATCCCTACCTGATCCGAGGTCAACCTGGATAAAAATTTGGGTTGAT CGGCAAGCGCCGGCCGGGCCTACAGAGCGGGTGACAAAGCCCCATACGCTCGAGGACCGGACGC GGTGCCGCCGCTGCCTTTCGGGCCCGTCCCCCGGGATCGGAGGACGGGGCCCAACACACAAGCCG TGCTTGAGGGCAGAAATGACGCTCGGACAGGCATGCCCCCCGGAATACCAGGGGGCGCAATGTGC GTTCAAAGACTCGATGATTCACTGAATTTGCAATTCACATTACGTATCGCATTTCGCTGCGTTCTTCA TCGATGCCGGAACCAAGAGATCCGTTGTTGAAAGTTTTAAATAATTTATATTTTCACTCAGACTACA ATCTTCAGACAGAGTTCGAGGGTGTCTTCGGCGGGCGCGGGCCCGGGGGCGTAAGCCCCCCGGCG GCCAGTTAAGGCGGGCCCGCCGAAGCAACAAGGTAAAATAAACACGGGTGGGAGGTTGGACCCA GAGGGCCCTCACTCGGTAATGATCCTTCC

QNYL13	TGCGGAAGGATCATTACCGAGTGAGGGCCCCTCGCGGCCCAACCTCCCACCCTTGTCTCCAACACC TGTTGCTTCGGCGGGCCCACCGGGGCCACCCGGTCGCCGGGGGACATCCGTCCCCGGGCCCGCGC CCGCCGAGGCGCTCTGTGAACCCTGATGAAGATGGGCTGTCTGAGTGATATGAAAATTGTCAAAAC TTTCAACAATGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTG AATTGCAGAATTCCGTGAATCATCGAATCTTTGAACGCACATTGCGCCCCCTGGCATTCCGGGGGGC ATGCCTGTCCGAGCGTCATTTCTGCCCTCAAGCACGGCTTGTGTGTTGGGTGTGGTCCCCCTGGGG ACCTGCCCGAAAGGCAGCGGCGACGTCCGTCTGGTCCTCGAGCGTATGGGGCTCTGTCACTCGCTC GGGAAGGACCTGCGGGGGTTGGTCACCACCACATCTTTTTACAAGGTTGACCTCGGATCAGGTAGG AGTTACCCGCTGAACTTAAGCATAT

Supplemental Table 6 The ITS sequence of fungi with the highest similarity

Name	Sequence
Pichia kudriavzevii	AGGATCATTACTGTGATTTAGTACTACACTGCGTGAGCGGAACGAAAACAACAACACCTAAAATGTGG AATATAGCATATAGTCGACAAGAGAAATCTACGAAAAACAAACAAAACTTTCAACAACGGATCTCTTG GTTCTCGCATCGATGAAGAGCGCAGCGAAATGCGATACCTAGTGTGAATTGCAGCCATCGTGAATCATC GAGTTCTTGAACGCACATTGCGCCCCTCGGCATTCCGGGGGGCATGCCTGTTTGAGCGTCGTTTCCATC TTGCGCGTGCGCAGAGTTGGGGGAGCGGAGCGGACGACGTGTAAAGAGCGTCGGAGCTGCGACTCGC CTGAAAGGGAGCGAAGCTGGCCGAGCGAACTAGACTTTTTTTCAGGGACGCTTGGCGGCCGAGAGCG AGTGTTGCGAGACAACAAAAAGCTCGACCTCAAATCAGGTAGGAATACCCGCTGAACTTAA
Pichia cecembensis	CAAGGTTTCCGTAGGTGAACCTGCGGAAGGATCATTACTGTGATTTAGTACCACACTGCGTGAGCGGA ACAAAAACAACAACACCTAAAATGTGGAATATGCATATAGTCGACAGAGAAATCTACGAAGAACAAAA CAAAACTTTCAACAACGGATCTCTTGGTTCTCGCATCGATGAAGAGCGCAGCGAAATGCGATACCTAG TGTGAATTGCAGCCATCGTGAATCATCGAGTTCTTGAACGCACATTGCGCCCCTCGGCATTCCGGGGGG CATGCCTGTTTGAGCGTCGTTTCCATCTTACGCGTGCGAGAGCTGGGGGAGCGGAGCGCACGACGTGT AAAGAGCGTCGGAGATGCGACTCGCCTGAAGGGGAGCGAAGCTGGCTGAGCGAACTAGACTTTTATT CAGGGACGCTTGGCGACCGAGAGCGAGTGTTGCGAGACAACAAAAAGCTCGACCTCAAATCAGGTAG GAATACCCGCTGAACTTAAGCATATCAATAAGCG
Samsoniella tiankengensis	CCGTTTGTACGCGGAGGACATTACCGAGTTTTCAACTCCCAAACCCTTCTGTGAACATACCTATCGTTG CTTCGGCGGACTCGCCCCAGCGTCCGGCCGGCCCCGCGCCGGCCGCGGCCTGGATCCAGGCGGCCGC CGGAGACCCCAAACTCTGTATTCTCAGTATCTTCTGAATCCGCCGCAAGGCAAAACAAATGAATCAAA ACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTG AATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGCATTCTGGCGGGCAT GCCTGTTCGAGCGTCATTTCAACCCTCGACTTCCCTTTGGGGAATCGGCGTTGGGGACCGGCCGTATAC CGCCGGCCCCGAAATGAAGTGGCGGCCCGTCCGCGGCGACCTCTGCGTAGTAATCCAACTCGCACCGG AACCCCGACGTGGCCACGCCGTAAAACCCCCGACTTCTGAACGTTGACCTCGGATCAGGTAGGAATAC CCGCTGAACTTAAGCATATCAATAAGCCGGAGGAA
Samsoniella guizhouensis	GCGTATGGTTACGCGGAGGACATTACCGAGTTTTCACTCCCAAACCCTTCTGTGAACATACCTATCGTT GCTTCGGCGGACTCGCCCCAGCGTCCGGCCGGCCCCGCGCCGGCCGCGGCCTGGATCCAGGCGGCCG CCGGAGACCCCAAACTCTGTATTCTCAGTATCTTCTGAATCCGCCGCAAGGCAAAACAAATGAATCAA AACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGT GAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGCATTCTGGCGGGCA TGCCTGTTCGAGCGTCATTTCAACCCTCGACTTCCCTTTGGGGAAATCGGCGTTGGGGACCGGCCGTAT ACCGCCGGCCCCGAAATGAAGTGGCGGCCCGTCCGCGGCGACCTCTGCGTAGTAATCCAACTCGCACC GGAACCCCGACGTGGCCACGCCGTAAAACCCCCGACTTCTGAACGTTGACCTCGGATCAGGTAGGAAT ACCCGCTGAACTTAAGCATATCAAAAGCCGGAGGAA

Trichoderma linzhiense	CCGAGTTTACAACTCCCAAACCCAATGTGAACGTTACCAAACTGTTGCCTCGGCGGGAACTCATGCCC CGGGTGCGTCGCAGCCCCGGACCAAGGCGCCCGCCGGAGGACCAACCAAAACTCTTTTTGTATACCCC CTCGCGGGTTTTTTTATAATCTGAGCCTTCTCGGCGCCTCTCGTAGGCGTTTCGAAAATGAATCAAAACT TTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATT GCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCT GTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGGTCGGCGTTGGGGATCGGCCCTCCTCTTGC GGGGGCCGTCTCCGAAATACAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCG CATCGGGAGCGCGGCGCGTCCACAGCCGTTAAACACCCAACTTCTGAAATGTTGACCTCGGATCAGGT AGGAATACCCGCTGAACTTAAGCATATCAAT
Trichoderma cerinum	AGGGATCATTACCGAGTTTACAACTCCCAAACCCAATGTGAACGTTACCAAACTGTTGCCTCGGCGGG AACTCATGCCCCGGGTGCGTCGCAGCCCCGGACCAAGGCGCCCGCCGGAGGACCAACCAAAACTCTT TTTGTATACCCCCTCGCGGGTTTTTTATAATCTGAGCCTTCTCGGCGCCTCTCGTAGGCGTTTCGAAAAT GAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAA GTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTG GCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGTCGGCGTTGGGGATCGG CCCTCCTCTTGCGGGGGCCGTCTCCGAAATACAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAG TTTGCACACTCGCATCGGGAGCGCGGCGCGTCCACAGCCGTTAAACACCCAACTTCTGAAATGTTGAC CTCGGATCAGGTAGGAATACCCGCTGAACTTAA
Trichoderma inhamatum	TCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCAATGTGAACGTTACCAAACTGTTGCCTCGGC GGGATCTCTGCCCCGGGTGCGTCGCAGCCCCGGACCAAGGCGCCCGCCGGAGGACCAACCAAAACTC TTATTGTATACCCCCTCGCGGGTTTTTTTTATAATCTGAGCCTTCTCGGCGCCTCTCGTAGGCGTTTCGAA AATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGA TAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTC TGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGTCGGCGTTGGGGATC GGCCCTCCCTTAGCGGGGGCCGTCTCCGAAATACAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGT AGTTTGCACACTCGCATCGGGAGCGCGGCGCGTCCACAGCCGTTAAACACCCAACTTCTGAAATGTTG ACCTCGGATCAGGTAGGAATACCCGCTGAACTTAAGCATAT
Trichoderma simmonsii	GTCGTAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCA ATGTGAACGTTACCAAACTGTTGCCTCGGCGGGATCTCTGCCCCGGGTGCGTCGCAGCCCCGGACCAA GGCGCCCGCCGGAGGACCAACCAAAACTCTTATTGTATACCCCCTCGCGGGTTTTTTTATAATCTGAGC CTTCTCGGCGCCTCTCGTAGGCGTTTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTG GCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATC TTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGA ACCCCTCCGGGGGGTCGGCGTTGGGGATCGGCCCTCCCTTAGCGGGGTGGCCGTCTCCGAAATACAGT GGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCATCGGGAGCGCGGCGCGTCCAC AGCCGTTAAACACCCAACTTCTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCTGAACTTAAGC ATATCAATAG

Rhizopus arrhizus	AAGGATCATTAATTATGTTAAAGCGCCTTACCTTAGGGTTTCCTCTGGGGTAAGTGATTGCTTCTACACT GTGAAAATTTGGCTGAGAGACTCAGACTGGTCATGGGTAGACCTATCTGGGGTTTGATCGATGCCACTC CTGGTTTCAGGAGTACCCTTCATAATAAACCTAGAAATTCAGTATTATAAAGTTTAATAAAAAACAACTT TTAACAATGGATCTCTTGGTTCTCGCATCGATGAAGAACGTAGCAAAGTGCGATAACTAGTGTGAATTG CATATTCAGTGAATCATCGAGTCTTTGAACGCAGCTTGCACTCTATGGTTTTTCTATAGAGTACGCCTGC TTCAGTATCATCACAAACCCACACATAACATTTGTTTATGTGGTGATGGGTCGCATCGCTGTTTTATTACA GTGAGCACCTAAAATGTGTGTGATTTTCTGTCTGGCTTGCTAGGCAGGAATATTACGCTGGTCTCAGGA TCTTTTTTTTTGGTTCGCCCAGGAAGTAAAGTACAAGAGTATAATCCAGTAACTTTCAAACTATGATCTG AAGTCAGGTGGGATTACCCGCTGAACTTAAGCATATCAATAAGCGGAGGAAA
Rhizopus caespitosus	ATCATTAACTATTGATCGGCACTTTACTGTTGGGCGCAAGTCCTCAGTATTGTTTGCTTCTACACTGTGA AACTTGGCGATGAAGATTGTAATGATCTTCGGGAGAGACTCAGGACGCTGGCCATATGGGTAGGCCTGT TCTGGGGTTTGATCGATGCCAATCAGGTTTCGGCCTGGTACCCTTTATCATATACCATGAATTCAGAATTA AAAGTAATAAAATAACAACTTTTAACAATGGATCTCTTGGTTCTCGCATCGATGAAGAACGTAGCAAAG TGCGATAACTAGTGTGAATTGCATATTCGTGAATCATCGAGTCTTTGAACGCAGCTTGCACTCTATGGAT CTTCCATAGAGTACGCCTGCTTCAGTATCATAAAAACCCCACACATAATTTTTATGTGGTTATGGACGAG TCGCAATGCTGATCGTCTGAAATAATCGTAATTCCTTAAGGAATTGCGCTGGTCTCTGGATCTTCTTTTTT GGTTCGCCCAGGAATCAAGTATCTAGGGATTACTGCCAGCCAGGTATTAACCTTTCACTATGATCTGAA GTCAGGCGGGACTACCC
Trichoderma longibrachiatum	TAGAAGTCGTAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAA ACCCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATTCTCTTGCCCCGGGCGCGTCGCAGCCCC GGATCCCATGGCGCCCGCCGGAGGACCAACTCCAAACTCTTTTTTTCTCTCCGTCGCGGCTCCCGTCGC GGCTCTGTTTTATTTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAA CTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGA ATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATG CCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGGTCGGCGTTGGGGATCGGCCCCTCACC GGGCCGCCCCCGAAATACAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCA CCGGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTTCTGAAATGTTGACCTCGGATCAGG TAGGAATACCCGCTGAACTTAAGCATATCAATAAGCG
Trichoderma saturnisporum	TAGAAGTCGTAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAA ACCCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATCTCTTGCCCCGGGCGCGTCGCAGCCCC GGATCCCATGGCGCCCGCCGGAGGACCAACTCAAACTCTTTTTTCTCTCCGTCGCGGCTTCCGTCGCG GCTCTGTTTTATTTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAAC TTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAAT TGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCC TGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGTCGGCGTTGGGGATCGGCCCCTCACCGG GCCGCCCCCCGAAATCCAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACC GGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTCTGAAATGTTGACCTCGGATCAGGTAG GAATACCCGCTGAACTTAAGCATATCAATAAGCG

Aspergillus aflatoxiformans	ATTGATGGCTCGGTGAGGCCTTCGGACTGGCCCAGGAGGGTTGGCAACGACCCCCCAGGGCCGGAAA GTTGGTCAAACCCGGTCATTTAGAGGAAGTAAAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCGGA AGGATCATTACCGAGTGTAGGGTTCCTAGCGAGCCCAACCTCCCACCCGTGTTTACTGTACCTTAGTTG CTTCGGCGGGCCCGCCATTCATGGCCGCCGGGGGCTCTCAGCCCCGGGCCCGCGCCCGCCGGAGACA CCACGAACTCTGTCTGATCTAGTGAAGTCTGAGTTGATTGTATCGCAATCAGTTAAAACTTTCAACAAT GGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGATAACTAGTGTGAATTGCAGAATTC CGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTATTCCGGGGGGCATGCCTGTCCGAGCG TCATTGCTGCCCATCAAGCACGGCTTGTGTGTTGGGTCGTCGTCCCCTCTCCGGGGGGGGACGGGCCCC AAAGGCAGCGGCGGCACCGCGTCCGATCCTCGAGCGTATGGGGCTTTGTCACCCGCTCTGTAGGCCCG GCCGGCGCTTGCCGAACGCAAATCAATCTTTTTCCAGGTTGACCTCGGATCAGGTAGGGATACCCGCTG AACTTAAGCATATCAATAAGCGGAGGAAAAGAAACCAACCGGGATTGCCTCAGTAACGGCGAGTGAA
Aspergillus flavus	TCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGTAGGGTTCCTAGCGAGCCCAACCTCCCACCC GTGTTTACTGTACCTTAGTTGCTTCGGCGGGCCCGCCATTCATGGCCGCCGGGGGCTCTCAGCCCCGGG CCCGCGCCCGCCGGAGACACCACGAACTCTGTCTGATCTAGTGAANTCTGAGTTGATTGTATCGCAATC AGTTAAAACTTTCAACAATGGATCTCTTGGTTCAGGCATCGATGAAGAACGCAGCGAAATGCGATAAC TAGTGTGAATTGCAGAATTCCGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTATTCCGG GGGGCATGCCTGTCCGAGCGTCATTGCTGCCCATCAAGCACGGCTTGTGTGTTGGGTCGTCGTCCCCTC TCCGGGGGGGGACGGGCCCCAAAGGCAGCGGCGGCACCGCGTCCGATCCTCGAGCGTATGGGGCTTTG TCACCCGCTCTGTAGGCCCGGCCGGCGCTTGCCGAACGCAAATCAATCTTTTTCCAGGTTGACCTCGG ATCAGGTAGGGATACCCGCTGAACTTAAGCATATCAATAAGCGGAGGATCAATAAGCGGAAGAAAAGA AACCAACCGGGATTGCCTCAGTAACGGCGAGTGAAG
Aspergillus costaricensis	TCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGCGGGTCCTTTGGGCCCAACCTCCCATCCGTG TCTATTATACCCTGTTGCTTCGGCGGGCCCGCCGCTTGTCGGCCGCCGGGGGGGCGCCTTTGCCCCCCG GGCCCGTGCCCGCCGGAGACCCCAACACGAACACTGTCTGAAAGCGTGCAGTCTGAGTTGATTGAAT GCAATCAGTTAAAACTTTCAACAATGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGC GATAACTAATGTGAATTGCAGAATTCAGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTAT TCCGGGGGGCATGCCTGTCCGAGCGTCATTGCTGCCCTCAAGCCCGGCTTGTGTGTTGGGTCGCCGTC CCCCTCTCCGGGGGGACGGGCCCGAAAGGCAGCGGCGGCACCGCGTCCGATCCTCGAGCGTATGGGG CTTTGTCACATGCTCTGTAGGATTGGCCGGCGCCTGCCGACGTTTTCCAACCATTTTTTCCAGGTTGAC CTCGGATCAGGTAGGGATACCCGCTGAACTTAAGCATATCAATAAGCGGA
Aspergillus piperis	TCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGCGGGTCCTTTGGGCCCAACCTCCCATCCGTG TCTATTATACCCTGTTGCTTCGGCGGGCCCGCCGCTTGTCGGCCGCCGGGGGGGCGCCTTTGCCCCCCG GGCCCGTGCCCGCCGGAGACCCCAACACGAACACTGTCTGAAAGCGTGCAGTCTGAGTTGATTGAAT GCAATCAGTTAAAACTTTCAACAATGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGC GATAACTAATGTGAATTGCAGAATTCAGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTAT TCCGGGGGGCATGCCTGTCCGAGCGTCATTGCTGCCCTCAAGCCCGGCTTGTGTGTTGGGTCGCCGTC CCCCCTCTCCGGGGGGACGGGCCCGAAAGGCAGCGGCGGCACCGCGTCCGATCCTCGAGCGTATGGG GCTTTGTCACATGCTCTGTAGGATTGGCCGGCGCCTGCCGACGTTTTCCAACCATTTTTTCCAGGTTGA CCTCGGATCAGGTAGGGATACCCGCTGAACTTAAGCATATCAATAAGCGGA

Aspergillus welwitschiae	TCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGCGGGTCCTTTGGGCCCAACCTCCCATCCGTG TCTATTGTACCCTGTTGCTTCGGCGGGCCCGCCGCTTGTCGGCCGCCGGGGGGGCGCCTCTGCCCCCCCG GGCCCGTGCCCGCCGGAGACCCCAACACGAACACTGTCTGAAAGCGTGCAGTCTGAGTTGATTGAAT GCAATCAGTTAAAACTTTCAACAATGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGC GATAACTAATGTGAATTGCAGAATTCAGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTAT TCCGGGGGGCATGCCTGTCCGAGCGTCATTGCTGCCCTCAAGCCCGGCTTGTGTGTTGGGTCGCCGTC CCCCTCTCCGGGGGGACGGGCCCGAAAGGCAGCGGCGGCACCGCGTCCGATCCTCGAGCGTATGGGG CTTTGTCACATGCTCTGTAGGATTGGCCGGCGCCTGCCGACGTTTTCCAACCATTCTTTCCAGGTTGAC CTCGGATCAGGTAGGGATACCCGCTGAACTTAAGCATATCAATAAGCGGA
Aspergillus awamori	AAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGCGGGTCCTTTGGGC CCAACCTCCCATCCGTGTCTATTGTACCCTGTTGCTTCGGCGGGCCCGCCGCTTGTCGGCCGCCGGGGG GGCGCCTCTGCCCCCCGGGCCCGTGCCCGCCGGAGACCCCAACACGAACACTGTCTGAAAGCGTGCA GTCTGAGTTGATTGAATGCAATCAGTTAAAACTTTCAACAATGGATCTCTTGGTTCCGGCATCGATGAA GAACGCAGCGAAATGCGATAACTAATGTGAATTGCAGAATTCAGTGAATCATCGAGTCTTTGAACGCA CATTGCGCCCCCTGGTATTCCGGGGGGCATGCCTGTCCGAGCGTCATTGCTGCCCTCAAGCCCGGCTTG TGTGTTGGGTCGCCGTCCCCCTCTCCGGGGGGACGGGCCCGAAAGGCAGCGGCGGCACCGCGTCCGA TCCTCGAGCGTATGGGGCTTTGTCACATGCTCTGTAGGATTGGCCGGCGCCTGCCGACGTTTTCCAACC ATTCTTTCCAGGTTGACCTCGGATCAGGTAGGGATACCCGCTGAACTTAAGCATATCAATAA
Talaromyces pseudofuniculosus	CTGCGGAGGATCATTACCGAGTGCGGGCCCTCGTGGCCCAACCTCCCACCCTTGTCTCTCTACACCTGT TGCTTTGGCGGGCCCACTGGGGCTCCCTGGTCGCCGGGGGACGCCTGTCCCCGGGCCCGCGCCCGCC GAAGCGCTTCGTGAACCCTGATGAAGAAGGGCTGTCTGAGTACTATGAAAATTGTCAAAACTTTCAAC AATGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGA ATTCCGTGAATCATCGAATCTTTGAACGCACATTGCGCCCCCTGGCATTCCGGGGGGCATGCCTGTCCG AGCGTCATTTCTGCCCTCAAGCACGGCTTGTGTGTTGGGTGTGGTCCCCCCGGGGACCTGCCCGAAAG GCAGCGGCGACGTCCGTCTGGTCCTCGAGCGTATGGGGCTCTGTCACTCGCTCGGGAAGGACCTGCGG GGGTTGGTCACCACCACATTTTCCATTATGGTTGACCTCGGATCAGGTAGGAGTTACCCGCTGAACTTA AGCATATCAATAAGCGGAGGAAAAGAAACCAACCGGGATTGCCTCAGTAACGGCGAGTGA
Talaromyces funiculosus	TTCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGCGGGCCCTCGGGCCCAACCTCCCACCCTTG TCCTCTACACCTGTTGCTTTGGCGGGCCCACGGGGCCCCTGGTCGCCGGGGGACGCCGTCCCCGGGCC CGCGCCCGCCGAAGCGCTTCGTGAACCCTGATGAAGAAGGGCTGTCTGAGACTATGAAAATTGTCAAA ACTTTCAACAATGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGA ATTGCAGAATTCCGTGAATCATCGAATCTTTGAACGCACATTGCGCCCCCTGGCATTCCGGGGGGCATG CCTGTCCGAGCGTCATTTCTGCCCTCAAGCACGGCTTGTGTGTTGGGTGTGGTCCCCCGGGGACCTGC CCGAAAGGCAGCGGCGACGTCCGTCGGTCCTCGAGCGTATGGGGCTCGTCACTCGCTCGGGAAGGAC CTGCGGGGGTTGGTCACCACCACATTTTCTATTATGGTTGACCTCGGATCAGGTAGGAGTTACCCGCTG AACTTAAGCATATCAATAAGCGGAGGAAAAGAAACCAACCGGGATTGCCTCAGTAACGGCGAGTGA

Aspergillus jensenii	AAGGATCATTACCGAGTGCGGGCTGCCTCCGGGCGCCCAACCTCCCACCCGTGACTACCTAACACTGT TGCTTCGGCGGGGAGCCCTCTCGGGGGCGAGCCGCCGGGGACTACTGAACTTCATGCCTGAGAGTGAT GCAGTCTGAGTCTGAATATAAAATCAGTCAAAACTTTCAACAATGGATCTCTTGGTTCCGGCATCGATG AAGAACGCAGCGAACTGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAGTCTTTGAACG CACATTGCGCCCCCTGGCATTCCGGGGGGCATGCCTGTCCGAGCGTCATTGCTGCCCATCAAGCCCGGC TTGTGTGTTGGGTCGTCGTCCCCCCCGGGGGACGGGCCCGAAAGGCAGCGGCGGCACCGTGTCCGGT CCTCGAGCGTATGGGGCTTTGTCACCCGCTCGATTAGGGCCGGCCGGGCGCCAGCCGACGTCTCCAAC CATTTTCTTCAGGTTGACCTCGGATCAGGTAGGGATACCCGCTGAACTTAAGCATATCAATAAGCGGAG GAAAAGAAACCAACCGGGATTGCCCCAGTAACGGCGAGTGAA
Aspergillus versicolor	TCCGTAGGTGAACCTGCGGAAGGATCATTACTGAGTGCGGGCTGCCTCCGGGCGCCCAACCTCCCACC CGTGACTACCTAACACTGTTGCTTCGGCGGGGAGCCCTCTCGGGGGCGAGCCGCCGGGGACTACTGAA CTTCATGCCTGAGAGTGATGCAGTCTGAGTCTGAATATAAAATCAGTCAAAACTTTCAACAATGGATCT CTTGGTTCCGGCATCGATGAAGAACGCAGCGAACTGCGATAAGTAATGTGAATTGCAGAATTCAGTGA ATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGCATTCCGGGGGGCATGCCTGTCCGAGCGTCATT GCTGCCCATCAAGCCCGGCTTGTGTGTTGGGTCGTCGTCCCCCCCGGGGGACGGGCCCGAAAGGCAG CGGCGGCACCGTGTCCGGTCCTCGAGCGTATGGGGCTTTGTCACCCGCTCGATTTAGGGCCGGCCGGG CGCCAGCCGACGTCCAACCATTTTTCTTCAGGTTGACCTCGGATCAGGTAGGGATACCCGCTGAACTTA AGCATATCAATAAGCGGAGGAAAAGAAACCAACCGGGATTGCCCC
Penicillium rubens	TCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGAGGGCCCTCTGGGTCCAACCTCCCACCCGTG TTTATTTTACCTTGTTGCTTCGGCGGGCCCGCCTTAACTGGCCGCCGGGGGGCTTACGCCCCCGGGCCC GCGCCCGCCGAAGACACCCTCGAACTCTGTCTGAAGATTGTAGTCTGAGTGAAAATATAAATTATTTAA AACTTTCAACAACGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGATACGTAATGT GAATTGCAAATTCAGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTATTCCGGGGGGCAT GCCTGTCCGAGCGTCATTTCTGCCCTCAAGCACGGCTTGTGTGTTGGGCCCCGTCCTCCGATCCCGGGG GACGGGCCCGAAAGGCAGCGGCGGCACCGCGTCCGGTCCTCGAGCGTATGGGGCTTTGTCACCCGCT CTGTAGGCCCGGCCGGCGCTTGCCGATCAACCCAAATTTTTATCCAGGTTGACCTCGGATCAGGTAGGG ATACCCGCTGAACTTAAGCATATCAATAAGCGGAGGA
Penicillium goetzii	TCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGAGGGCCCTCTGGGTCCAACCTCCCACCCGTG TTTATTTTACCTTGTTGCTTCGGCGGGCCCGCCTTAACTGGCCGCCGGGGGGCTTACGCCCCCGGGCCC GCGCCCGCCGAAGACACCCCCGAACTCTGTCTGAAGATTGTAGTCTGAGTGAAAATATAAATTATTTAA AACTTTCAACAACGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGATACGTAATGT GAATTGCAAATTCAGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTATTCCGGGGGGCAT GCCTGTCCGAGCGTCATTTCTGCCCTCAAGCACGGCTTGTGTGTTGGGCCCCGTCCTCCGATCCCGGGG GACGGGCCCGAAAGGCAGCGGCGGCACCGCGTCCGGTCCTCGAGCGTATGGGGCTTTGTCACCCGCT CTGTAGGCCCGGCCGGCGCTTGCCGATCAACCCAAATTTTTATCCAGGTTGACCTCGGATCAGGTAGGG ATACCCGCTGAACTTAAGCATATCAATAAGCGGAGGA

Talaromyces purpureogenus	TTCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGAGGGCCCCTCGCGGCCCAACCTCCCACCCT TGTCCCAACACCTGTTGCTTCGGCGGGCCCACCGGGGCCACCCGGTCGCCGGGGGACATCCGTCCCCG GGCCCGCGCCCGCCGAGGCGCTCTGTGAACCCTGATGAAGATGGGCTGTCTGAGGATATGAAAATTGT CAAAACTTTCAACAATGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAAT GTGAATTGCAGAATTCCGTGAATCATCGAATCTTTGAACGCACATTGCGCCCCCTGGCATTCCGGGGGG CATGCCTGTCCGAGCGTCATTTCTGCCCTCAAGCACGGCTTGTGTGTTGGGTGTGGTCCCCCGGGGAC CTGCCCGAAAGGCAGCGGCGACGTCCGTCGGTCCTCGAGCGTATGGGGCTCGTCACTCGCTCGGGAA GGACCTGCGGGGGTTGGTCACCACCACATCTTTTACAAGGTTGACCTCGGATCAGGTAGGAGTTACCC GCTGAACTTAAGCATATCAATAAGCGGAGGAAAAGAAACCAACCGGGATTGCCTCAGTAACGGCGAGT GA
Talaromyces zhenhaiensis	GTAGGTGAACCTGCGGAAGGATCATTACCGAGTGAGGGCCCTCGCGGCCCAACCTCCCACCCTTGTCT CATATACCTGTTGCTTCGGCGGGCCCACCGGGGCCACCTGGTCGCCGGGGGACGTCTGTCCCCGGGCC CGCGCCCGCCGGAGCGCCCTTTGAACCCTGATGAAGATGGGCTGTCTGAGTGATATGAAAATTGTCAA AACTTTCAACAACGAATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGT GAATTGCAGAATTCCGTGAATCATCGAATCTTTGAACGCACATTGCGCCCCCTGGCATTCCGGGGGGCA TGCCTGTCCGAGCGTCATTTCTGCCCTCAAGCACGGCTTGTGTGTTGGGTGTGGTCCCTCCGGGGACCT GCCCGAAAGGCAGCGGCGACGTCCGTCTGGTCCTCGAGCGTATGGGGCTCTGTCACTCGCTCGGGAA GGACCTGCGGAGGTTGGTCACCACCACATCTTTTTTACAAGGTTGACCTCGGATCAGGTAGGAGTTAC CCGCTGAACTTAA
Talaromyces adpressus	TCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGCGGGCCCTCGCGGCCCAACCTCCCACCCTTG TCTCTATACACCTGTTGCTTTGGCGGGCCCACCGGGGCCACCTGGTCGCCGGGGGACGCACGTCCCCG GGCCCGCGCCCGCCGAAGCGCTCTGTGAACCCTGATGAAGATGGGCTGTCTGAGTACTATGAAAATTG TCAAAACTTTCAACAATGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTA ATGTGAATTGCAGAATTCCGTGAATCATCGAATCTTTGAACGCACATTGCGCCCCCTGGCATTCCGGGG GGCATGCCTGTCCGAGCGTCATTTCTGCCCTCAAGCACGGCTTGTGTGTTGGGTGTGGTCCCCCCGGG GACCTGCCCGAAAGGCAGCGGCGACGTCCGTCTGGTCCTCGAGCGTATGGGGCTCTGTCACTCGCTCG GGAGGGACCTGCGGGGGTTGGTCACCACCATGTTTTTTACCACGGTTGACCTCGGATCAGGTAGGAGT TACCCGCTGAACTTAAGCATATCAATAAGCGGAGGA

Supplemental Table 7 ITS sequence of the top ten highest similarity with QNYL6

Name	Sequence
Trichoderma longibrachiatum	TAGAAGTCGTAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATTCTCTTGCCCCGGGCGCGTCGCAGCCCCGGATCCCATGGCGCCCGCCGGAGGACCAACTCCAAACTCTTTTTTTCTCTCCGTCGCGGCTCCCGTCGCGGCTCTGTTTTATTTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGTCGGCGTTGGGGATCGGCCCCTCACCGGGCCGCCCCCGAAATACAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACCGGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTTCTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCTGAACTTAAGCATATCAATAAGCG
Trichoderma saturnisporum	TAGAAGTCGTAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATCTCTTGCCCCGGGCGCGTCGCAGCCCCGGATCCCATGGCGCCCGCCGGAGGACCAACTCAAACTCTTTTTTCTCTCCGTCGCGGCTTCCGTCGCGGCTCTGTTTTATTTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGTCGGCGTTGGGGATCGGCCCCTCACCGGGCCGCCCCCGAAATCCAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACCGGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTCTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCTGAACTTAAGCATATCAATAAGCG
Trichoderma pararee sei	CAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATTCTCTGCCCCGGGCGCGTCGCAGCCCCGGATCCCATGGCGCCCGCCGGAGGACCAACTCAAACTCTTTTTTCTCTCCGTCGCGGCTTCCGTCGCGGCTCTGTTTTACCTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGTCGGCGTTGGGGATCGGCCCCTCACCGGGCCGCCCCCGAAATACAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACCGGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTCTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCTGAACTTAAGCATATCAAT
Trichoderma reesei	TAGAAGTCGTAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATTCTCTGCCCCGGGCGCGTCGCAGCCCCGGATCCCATGGCGCCCGCCGGAGGACCAACTCAAACTCTTTTTTCTCTCCGTCGCGGCTTCCGTCGCGGCTCTGTTTTACCTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGTCGGCGTTGGGGATCGGCCCCTCACCGGGCCGCCCCCGAAATACAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACCGGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTCTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCTGAACTTAAGCATATCAATAAGCG

Trichoderma citrinoviride	TGGAAGTAAAAGTCGTAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATTCTCTGCCCCGGGCGCGTCGCAGCCCCGGATCCCATGGCGCCCGCCGGAGGACCAACTCAAACTCTTTTTTCTCTCCGTCGCGGCCTACGTCGCGGCTCTGTTTTATTTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGGTCGGCGTTGGGGATCGGCCCCTCACCGGGCCGCCCCCGAAATACAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACCGGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTCTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCTGAACTTAAGCATATCAATAAGCGGAGGA
Trichoderma aquatica	GTAAAAGTCGTAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATTCTCTGCCCCGGGCGCGTCGCAGCCCCGGATCCCATGGCGCCCGCCGGAGGACCAACTCAAACTCTTTTTTTCTCTCCGTCGCGGCTTCCGTCGCGGCTCTGTTTTACCTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGGTCGGCGTTGGGGATCGGCCCCTCACCGGGCCGCCCCCGAAATCCAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACCGGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTCTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCTGAACTTAAGCA
Trichoderma effusum	AGGGATCATTACCGAGTTTACAACTCCCAAACCCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATCTCTGCCCCGGGCGCGTCGCAGCCCCGGATCCCATGGCGCCCGCCGGAGGACCAACCAAACTCTTTTTTCTCTCCGTCGCGGCCCTCGTCGCGGCTCTGTTTTATTTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGGTCGGCGTTGGGGATCGGCCCCTCACCGGGCCGCCCCCGAAATCCAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACCGGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTCTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCTGAACTTAA
Trichoderma pseudokoningii	TAGAAGTCGTAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATCTCTGCCCCGGGCGCGTCGCAGCCCCGGACCCCATGGCGCCCGCCGGAGGACCAACCAAACTCTTTTTTCTCTCCGTCGCGGCCTACGTCGCGGCTCTGTTTTATTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAACCCCTCCGGGGGGGTCGGCGTTGGGGATCGGCCCCTCACCGGGCCGCCCCCGAAATCCAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACCGGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTCTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCTGAACTTAAGCATATCAATAAGCG

Trichoderma novae-zelandiae	TGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCCAGTGTGAACGTTACCAATCTGTTGCCTCG GCGGGATCTCTGCCCCGGGCGCGTCGCAGCCCCGGATCCCATGGCGCCCGCCGGAGGACCAACCAAAA CTCCTTTTTATCTCCGTCGCGGCTCCGTCGCGGCTCTGTTTTATTTTGCTCTGAGCCTTTCTCGGCGACCC TAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAACAACGGATCTCTTGGTTCTGGCATCGATGAAGAA CGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAATCTTTGAACGCACATTG CGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGAGCGTCATTTCAACCCTCGAGCCCCTCCGGGGGGT CGGCGTTGGGGATCGGCCCCTCACCGGGCCGCCCCCGAAATCCAGTGGCGGTCTCGCCGCAGCCTCTCC TGCGCAGTAGTTTGCACACTCGCACCGGGAGCGCGGCGCGGCCACAGCCGTAAAACACCCAAAACATT CTGAAATGTTGACCTCGGATCAGGTAGGAATACCCGCTGAACTTAAGCA
Trichoderma ghanense	TAGAAGTCGTAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACGGAGTTTACAACTCCCAAA CCCCAATGTGAACGTTACCAATCTGTTGCCTCGGCGGGATCTCTGCCCCGGGCGCGTCGCAGCCCCGGA TCCCATGGCGCCCGCCGGAGGACCAACCAAACTCTTTTTTCTCTCCGTCGCGGCTTCCGTCGCGGCTCT GTTTTAACTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAA CAACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGA ATTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGA GCGTCATTTCAACCCTCGAACCCCTCCGGGGGGTCGGCGTTGGGGATCGGCACGCCCTCACACGGGTGC CGGCCCCGAAATCCAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACCGGG AGCGCGGCGCGGCCACAGCCGTAAAACACCCCAAACTTCTGAAATGTTGACCTCGGATCAGGTAGGAA TACCCGCTGAACTTAAGCATATCAATAAGCG

Supplemental Table 8 Typical FTIR spectra of plant sample (Chow et al., 2019)

Wavelength (cm^{-1})	Assignment
3170	hydrogen bond (O-H) stretching
2924	strong C-H stretching
2360	CO2
1749	unconjugated C=O, absorbed O-H and conjugated C-O of xylans
1633	absorbed O-H and conjugated C-O in lignin
1457	C-H deformation in lignin
1376	C-H deformation in cellulose and hemicellulose
1306	phenol group of cellulose
1155	C-O-C in carbohydrate
1053	C-O, C-H in guaiacyl of lignin
890	C-H deformation in cellulose

Chow, Y., Ting, A.S.Y. Influence of fungal infection on plant tissues: FTIR detects compositional changes to plant cell walls. Fungal Ecology. Fungal Ecology 37, 38-47. (2019). https://doi.org/10.1016/j.funeco.2018.10.004

Supplemental Table 9 Transcriptomic analysis of Qingdao lily root under different treatments

Sample	Raw Reads	Clean Reads	Clean Bas	Error Rat	Q20(%)	Q30(%)	GC Content(%)
Control1	74527818	70846988	10.63	0.01	98.82	96.25	47.86
Control2	72444254	69253328	10.39	0.01	98.88	96.42	47.84
Control3	79341130	76011286	11.4	0.01	98.89	96.47	47.93
Mock1	82087406	78361630	11.75	0.01	99.11	97.09	48.73
Mock2	73117690	69796848	10.47	0.01	99.03	96.82	48.77
Mock3	70204716	67259998	10.09	0.01	99.11	97.06	48.34
Treat1	84073336	80723706	12.11	0.01	99.3	97.66	48.32
Treat2	52925384	51070966	7.66	0.01	99.09	97.01	48.47
Treat3	71572634	68776966	10.32	0.01	99.09	97	48.29

Supplemental Table 10 ITS sequence of QNYL14, QNYL15, QNYL16, and QNYL17

Name	Sequence
QNYL14	GTAACAAGGTTTCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGAGGGCCCTCTGGGTCCAACC TCCCACCCGTGTTTATTTTACCTTGTTGCTTCGGCGGGCCCGCCTTAACTGGCCGCCGGGGGGCTTACG CCCCCGGGCCCGCGCCCGCCGAAGACACCCTCGAACTCTGTCTGAAGATTGAAGTCTGAGTGAAAAT ATAAATTATTTAAAACTTTCAACAACGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGC GATACGTAATGTGAATTGCAAATTCAGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTATT CCGGGGGGCATGCCTGTCCGAGCGTCATTGCTGCCCTCAAGCCCGGCTTGTGTGTTGGGCCCCGTCCC CCGATCTCCGGGGGACGGGCCCGAAAGGCAGCGGCGGCACCGCGTCCGGTCCTCGAGCGTATGGGGC TTTGTCACCCGCTCTGTAGGCCCGGCCGGCGCTTGCCGATCAACCCAAATTTTTATCCAGGTTGACCTC GGATCAGGTAGGGATACCCGCTGAACTTAAGCATATCA
QNYL15	TAACAAGGTTTCCGTAGGTGAACCTGCGGAAGGATCATTACCGAGTGAGGGCCCTCTGGGTCCAACCT CCCACCCGTGTTTATCGTACCTTGTTGCTTCGGCGGGCCCGCCTCACGGCCGCCGGGGGGCATCCGCC CCCGGGCCCGCGCCCGCCGAAGACACACAAACGAACTCTTGTCTGAAGATTGCAGTCTGAGTACTTG ACTAAATCAGTTAAAACTTTCAACAACGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAAT GCGATAAGTAATGTGAATTGCAGAATTCAGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGG TATTCCGGGGGGCATGCCTGTCCGAGCGTCATTGCTGCCCTCAAGCACGGCTTGTGTGTTGGGCTCTCG CCCCCCGCTTCCGGGGGGCGGGCCCGAAAGGCAGCGGCGGCACCGCGTCCGGTCCTCGAGCGTATGG GGCTTCGTCACCCGCTCTGTAGGCCCGGCCGGCGCCCGCCGGCGAACACCATCAATCTTAACCAGGTT GACCTCGGATCAGGTAGGGATACCCGCTGAACTTAAGCATATCA
QNYL16	TAACAAGGTCTCCGTTGGTGAACCAGCGGAGGGATCATTACCGAGTTTACAACTCCCAAACCCCAATG TGAACGTTACCAATCTGTTGCCTCGGCGGGATTCTCTTGCCCCGGGCGCGTCGCAGCCCCGGATCCCAT GGCGCCCGCCGGAGGACCAACTCCAAACTCTTTTTTCTCTCCGTCGCGGCTCCCGTCGCGGCTCTGTT TTATTTTTGCTCTGAGCCTTTCTCGGCGACCCTAGCGGGCGTCTCGAAAATGAATCAAAACTTTCAACA ACGGATCTCTTGGTTCTGGCATCGATGAAGAACGCAGCGAAATGCGATAAGTAATGTGAATTGCAGAA TTCAGTGAATCATCGAATCTTTGAACGCACATTGCGCCCGCCAGTATTCTGGCGGGCATGCCTGTCCGA GCGTCATTTCAACCCTCGAACCCCTCCGGGGGGTCGGCGTTGGGGATCGGCCCCTCACCGGGCCGCCC CCGAAATACAGTGGCGGTCTCGCCGCAGCCTCTCCTGCGCAGTAGTTTGCACACTCGCACCGGGAGCG CGGCGCGGCCACAGCCGTAAAACACCCCAAACTTCTGAAATGTTGACCTCGGATCAGGTAGGAATACC CGCTGAACTTAAGCATATCA
QNYL17	TAACAAGGTTTCCGTAGGTGAACCTGCGGAAGGATCATTACTGAGTGAGGGCCCTCTGGGTCCAACCT CCCACCCGTGTCTCTTGTACCATGTTGCTTCGGCGAGCCCGCCTCACGGCCGCCGGGGGGCATCTGCC CCCGGGCCCGCGCCCGCCGAAGCCCCCTCTGAACGCTGTCTGAAGATTGCAGTCTGAGCGATAAGCA AAAATTATTTAAAACTTTCAACAACGGATCTCTTGGTTCCGGCATCGATGAAGAACGCAGCGAAATGC GATAACTAATGTGAATTGCAGAATTCAGTGAATCATCGAGTCTTTGAACGCACATTGCGCCCCCTGGTA TTCCGGGGGGCATGCCTGTCCGAGCGTCATTGCTGCCCTCAAGCACGGCTTGTGTGTTGGGCCTCCGT CCTCCCCCCGGGGGGACGGGCCCGAAAGGCAGCGGCGGCACCGTGTCCGGTCCTCGAGCGTATGGGG CTTTGTCACCCGCTCTGTAGGCCCGGCCGGCGCTGGCCGACCCTCCAACCCCATTTTTTCAGGTTGACC TCGGATCAGGTAGGGATACCCGCTGAACTTAAGCATATCA

Supplemental Table 11 Microbial fertilizer material construction

Species	Material	Name
General fertilizer	Fulvic acid, KH_2PO_4, Soil activator, Elemental water	Mock
Microbial fertilizer	Fulvic acid, KH_2PO_4, Soil activator, Elemental water, *T.longibrachiatum* QDAU0920, QNYL14, QNYL15, QNYL16, QNYL17	Treatment