

Supplementary Information

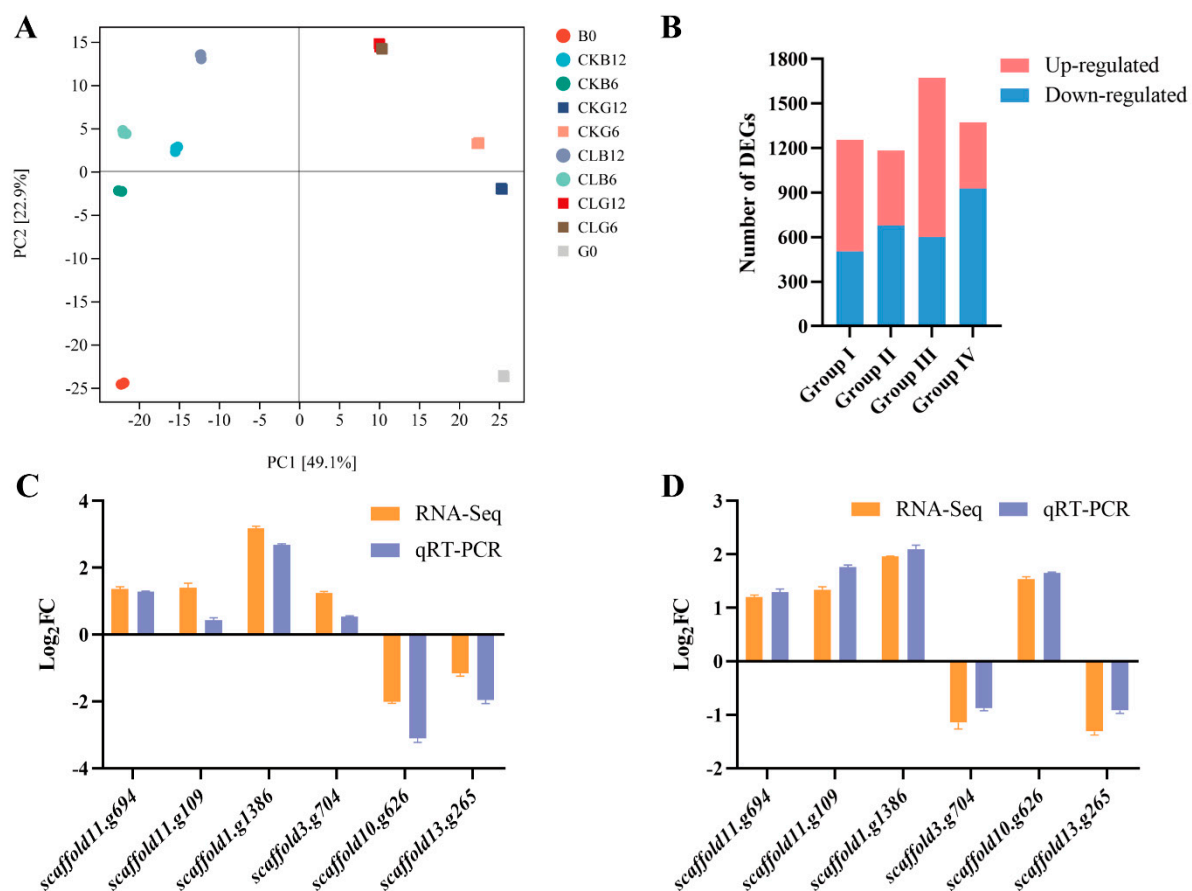


Figure S1. Transcriptome data of principal component analysis (A), number of differentially expressed genes (B), together with qRT-PCR validation for Group I (C) and Group IV (D). CK is treated with distilled water, while CL is with the water extract of *C. militaris* dried product. B and G indicate the stalk and cap of *F. filiformis*, respectively, with 0,6, and 12 denoting the storage time.

Table S1. Primers for qRT-PCR

Gene	Function/ Pathway	Primer sequence (5'→3')	
		F	R
<i>actin</i>	Reference	GTTTCTCTCTTCCTCACGCCATCC	AGCCACGTTCCATCAGGTTCTTG
<i>scaffold11.g694</i>	Transaminase Activity	GATTGCTCTACCTGGTATGTCGTT CC	CCGCCTGACCGCCTCCTC
<i>scaffold1.g1386</i>	Amino Acid Metabolism	CCACGGTTCCCATCGCTGTTG	TACAATCTTGCTGCCTATGACGACA C
<i>scaffold11.g109</i>	Amino Acid Metabolism	TACACGCTAAGACGCTGGAACAA C	GCTGAAGTTGGAGATGTTGGAGAG G
<i>scaffold10.g626</i>	Amino Acid Biosynthesis	TTGGTTCGCAATGTCAACATGATT CTG	GCTGCTGCTAGTGTCGGAATGAG
<i>scaffold3.g704</i>	Meiosis	GCAATCAACCACCTCCACCTTCC	TAGGCGAGGCGTCTTGTGAGAG
<i>scaffold13.g265</i>	DNA Replication	TCTGCCGCTACCACTGATTCTATT AAC	CCAGAGACGAGAGGGAGGTTGTA G

Table S2. Reagents for qPCR reaction

Reagents	Volume (μL)
2 × Taq Pro Universal SYBR qPCR Master Mix	10.0
Forward Primer	0.4
Reverse Primer	0.4
Template cDNA*	x
dd H ₂ O	Up to 20.0

* The final amount of cDNA in this reaction is 100 ng.

Table S3. qPCR cycling conditions

Stage	Temperature (°C)	Time (s)	Number of Cycles
Initial Denaturation	95	30	1
Circular Reaction	95	10	40
	60	30	
Melting Curve	Default program in the instrument		

Table S4. Comparison of antifungal effects

Treatment	Water Extract of Dried <i>C. militaris</i>	Sterile Water
Detected Fungus	<i>Alternaria alternata</i>	<i>Alternaria alternata</i>
	<i>Aspergillus aculeatus</i>	<i>Aspergillus aculeatus</i>
	<i>Aspergillus japonicus</i>	<i>Aspergillus japonicus</i>
	<i>Aspergillus melleus</i>	<i>Aspergillus melleus</i>
	<i>Aspergillus muricatus</i>	<i>Aspergillus muricatus</i>
	<i>Aspergillus neoniger</i>	<i>Aspergillus neoniger</i>
	<i>Aspergillus ochraceus</i>	<i>Aspergillus oryzae</i>
	<i>Aspergillus oryzae</i>	<i>Bipolaris bicolor</i>
	<i>Aspergillus sp. BM6</i>	<i>Cladosporium anthropophilum</i>
	<i>Bipolaris bicolor</i>	<i>Cladosporium cladosporioides</i>
	<i>Cladosporium anthropophilum</i>	<i>Cladosporium tenuissimum</i>
	<i>Cladosporium cladosporioides</i>	<i>Curvularia americana</i>
	<i>Cladosporium tenuissimum</i>	<i>Curvularia rouhanii</i>
	<i>Curvularia americana</i>	<i>Curvularia tsudae</i>
	<i>Curvularia rouhanii</i>	<i>Fusarium incarnatum</i>
	<i>Curvularia tsudae</i>	<i>Penicillium citrinum</i>
	<i>Neurospora tetrasperma</i>	<i>Penicillium oxalicum</i>
	<i>Penicillium citrinum</i>	<i>Penicillium steckii</i>
	<i>Penicillium oxalicum</i>	<i>Stemphylium lycopersici</i>
	<i>uncultured fungus</i>	<i>uncultured fungus</i>

Table S5. Estimated cost of CME preservation for *F. filiformi*

Price of <i>F. filiformi</i> (RMB/kg)	Price of Dried <i>C. militaris</i> (RMB/kg)	Consumption Cost (RMB/RMB)	Consumption Ratio (%)
6	45	0.02498	2.50
8		0.01873	1.87
10		0.01499	1.50
15		0.00999	1.00

¹ Here take the usage of CME for *F. filiformi* as 0.111mL/g with the concentration of 30 mg/mL, which means 0.00333g of dried *C. militaris* is required to preserve the freshness of 1g *F. filiformi*. Considering the price fluctuations of *F. filiformi*, the consumption cost and ratio is presented in the above table.

Table S6. Transcriptome sequencing data statistics

Sample	Total reads	Clean reads	Clean bases/bp	Q30/%	Total mapped clean reads/%
B0_1	54 129 360	53 497 084	8 069 621 556	96.79	92.25%
B0_2	58 725 894	58 179 696	8 775 168 787	97.15	92.28%
B0_3	47 867 410	47 323 634	7 137 307 865	96.83	92.27%
G0_1	53 143 338	52 568 596	7 928 858 779	96.99	92.04%
G0_2	53 093 720	52 497 138	7 910 727 103	96.88	92.02%
G0_3	55 747 806	55 124 720	8 313 061 337	96.98	91.91%
CKB6_1	62 403 716	61 608 350	9 283 051 066	96.71	91.67%
CKB6_2	53 120 830	52 613 192	7 937 706 127	97.17	91.73%
CKB6_3	57 161 662	56 485 158	8 519 596 706	96.75	91.71%
CLB6_1	52 676 762	52 126 928	7 851 223 408	96.98	91.92%
CLB6_2	66 130 180	65 385 928	9 857 722 397	96.89	91.88%
CLB6_3	64 016 196	63 334 872	9 546 674 806	96.99	91.87%
CKG6_1	54 141 266	53 541 758	8 074 794 136	96.84	92.17%
CKG6_2	55 059 922	54 467 332	8 214 709 818	96.91	92.22%
CKG6_3	53 423 452	52 791 554	7 948 106 704	96.76	92.12%
CLG6_1	53 149 186	52 575 094	7 914 145 465	96.98	92.60%
CLG6_2	62 399 038	61 741 978	9 301 447 556	96.98	92.61%
CLG6_3	59 058 332	58 442 918	8 797 002 290	97.01	92.59%
CKB12_1	64 222 562	63 468 540	9 573 487 586	96.86	92.10%
CKB12_2	57 991 908	57 385 518	8 655 598 017	96.99	92.17%
CKB12_3	48 388 190	47 886 236	7 221 724 127	96.97	92.18%
CLB12_1	57 682 268	57 146 796	8 611 316 524	97.1	92.62%
CLB12_2	59 436 436	58 742 196	8 844 836 566	96.86	92.59%
CLB12_3	57 806 804	57 195 610	8 610 780 469	96.91	92.57%
CKG12_1	56 551 068	55 848 924	8 422 045 122	96.83	92.15%
CKG12_2	44 512 558	44 004 640	6 630 207 762	96.85	92.16%
CKG12_3	56 844 200	56 230 704	8 469 178 860	96.89	92.20%
CLG12_1	56 717 124	56 186 662	8 463 962 409	97.26	92.61%
CLG12_2	59 074 552	58 458 156	8 801 580 084	97	92.58%
CLG12_3	45 874 258	45 368 224	6 840 681 559	96.91	92.58%

¹ CK is treated with distilled water, while CL is with the water extract of *C. militaris* dried product. B and G indicate the stalk and cap of *F. filiformis*, respectively, with 0,6 and 12 denoting the storage time. _1/2/3 is for experimental replicate.