

Table S1.

Primers for RT-qPCR analyzing MPs and citrinin biosynthetic genes

Primers	Sequences (5'→3')	References
<i>β-actin F</i>	5'-TTCGAGACCTTCAACGCCC-3'	(Wang et al., 2012)
<i>β-actin R</i>	5'-ACCCTCGTAGATGGGAACGA-3'	
<i>MpPKS5 F</i>	5'-TGTCCGACGAGTTTCTGCAA-3'	(Wang et al., 2015)
<i>MpPKS5 R</i>	5'-TATCAACGCTGCTTGGGCAT-3'	
<i>MpFasA2 F</i>	5'-ATGGATCGCCCGATCTTGTC-3'	(Wang et al., 2015)
<i>MpFasA2 R</i>	5'-CTTTGTCGAGTCCGCTGGAT-3'	
<i>MpFasB2 F</i>	5'-CCTCCAGGGATTACAACCCG-3'	(Wang et al., 2015)
<i>MpFasB2 R</i>	5'-ATTCAATGCCAGGTGCTCCA -3'	
<i>mppA F</i>	5'-TCCCGTTTCTTGGACGTGAG-3'	(Wang et al., 2015)
<i>mppA R</i>	5'-ACGTGCCATGGTTCTGTCTT-3'	
<i>mppB F</i>	5'-CGTCTCGCCCGATAACTTCA-3'	(Wang et al., 2015)
<i>mppB R</i>	5'-TTGACAGACGGGTCGAAGTC -3'	
<i>mppC F</i>	5'-CAGTCCTCGTCCCTTCCAGT -3'	(Wang et al., 2015)
<i>mppC R</i>	5'-CCACGGTGAAGGATGTCGAG -3'	
<i>mppD F</i>	5'-TCAACACGGGAGATGCTGTC-3'	(Wang et al., 2015)
<i>mppD R</i>	5'-GCCAAAGGACAGGAGCAGAT-3'	
<i>mppE F</i>	5'-CTTCCCGATGCCGTTGTGAT-3'	(Wang et al., 2015)
<i>mppE R</i>	5'-CGTCTCGTGGATCATCTCGT-3'	
<i>mppR1 F</i>	5'-TCTGCAGTATGCCATGTGGG-3'	(Wang et al., 2015)
<i>mppR1 R</i>	5'-ATGGCACCGTCACTTAGCTC-3'	
<i>mppR2 F</i>	5'-ACGAAACCCTCCATGACACC-3'	(Wang et al., 2015)
<i>mppR2 R</i>	5'-TGCAGACAGCCTTGTGGTAG-3'	
<i>ctnA F</i>	5'-AAATGCCGCGAAGAAGACA-3'	(Wang et al., 2015)
<i>ctnA R</i>	5'-GGAATTGCGCGGAAAGG-3'	
<i>pksCT F</i>	5'-GATTTAGTCAAGGCGCGAAGA-3'	(Wang et al., 2015)
<i>PksCT R</i>	5'-CGTAGTTCCTGGCGGATTTG-3'	

References

- Wang, C., Chen, D., Chen, M., Wang, Y., Li, Z., Li, F., 2015. Stimulatory effects of blue light on the growth, monascin and ankaflavin production in *Monascus*. *Biotechnol. Lett.* 37, 1043–1048. doi:10.1007/s10529-014-1763-3
- Wang, C., Yang, H., Chen, M., Wang, Y., Li, F., Luo, C., Zhao, S., He, D., 2012. Real-time quantitative analysis of the influence of blue light on citrinin biosynthetic gene cluster expression in *Monascus*. *Biotechnol. Lett.* 34, 1745–1748. doi:10.1007/s10529-012-0962-z

Table S2

The properties datas of *Monascus* pigments (MPs). The MPs were identified by Mass Spectrometry (MS) were analyzed.

No.	MPs	Color	Molecular formula	[M+H] ⁺	Reference
P1	Rubropunctamine	Red	C ₂₁ H ₂₃ NO ₄	354.17	(Miyake et al,2008)
P2	Monasfluore A	Yellow	C ₂₁ H ₂₄ O ₅	357.17	(Miyake et al,2008)
P3	Monascin	Yellow	C ₂₁ H ₂₆ O ₅	359.19	(Miyake et al,2008)
P4	Monascorubramine	Red	C ₂₃ H ₂₇ NO ₄	382.20	(Miyake et al,2008)
P5	Monasfluore B	Yellow	C ₂₃ H ₂₈ O ₅	385.20	(Miyake et al,2008)
P6	Ankaflavin	Yellow	C ₂₃ H ₃₀ O ₅	387.22	(Miyake et al,2008)
P7	Monascorubrin	Orange	C ₂₃ H ₂₆ O ₅	383.19	(Miyake et al,2008)
P8	Rubropunctain	Orange	C ₂₁ H ₂₂ O ₅	355.15	(Miyake et al,2008)

References

Miyake, T. , Kono, I. , Nozaki, N. , & Sammoto, H. . (2008). Analysis of pigment compositions in various monascus cultures. Food Science and Technology Research, 14(2), 194-197.

Table S3

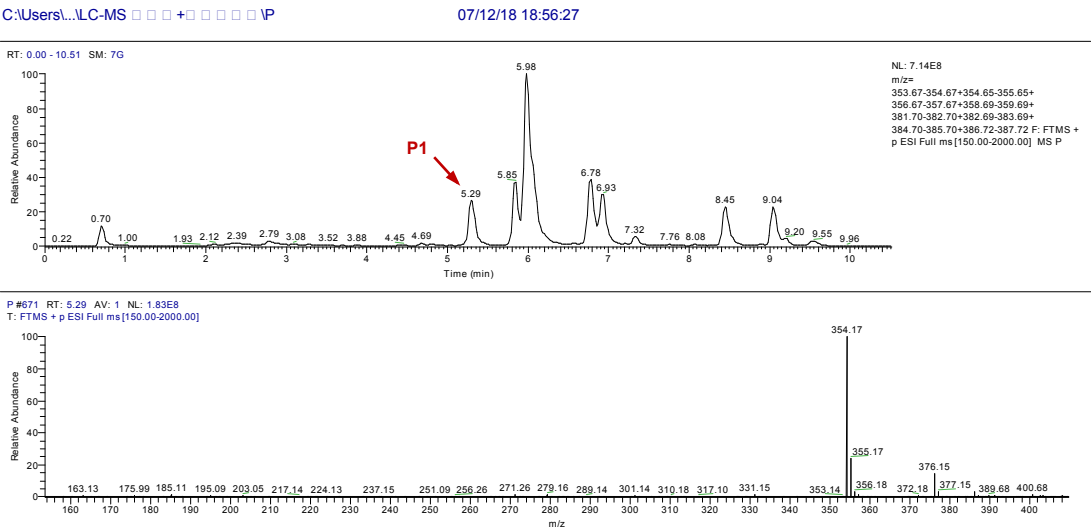
Overview of *Monascus* transcriptome in M, ML and MX groups

Samples	ReadSum	BaseSum	GC(%)	N(%)	Q20(%)	Q30(%)
ML1	23726196	7080000000	53.25	0.01	97.72	93.77
ML2	26935912	8050000000	53.04	0.01	97.32	92.91
ML3	21615053	6470000000	53.01	0.01	97.43	93.11
MX1	25563296	7620000000	52.98	0.01	97.43	93.18
MX2	24568539	7330000000	52.98	0.01	97.32	92.93
MX3	26117358	7820000000	53.26	0.01	97.26	92.72
M1	26353798	7870000000	52.87	0.01	97.44	93.17
M2	22355946	6630000000	53.17	0.01	97.44	93.18
M3	28061735	8380000000	53.12	0.01	96.97	92.31

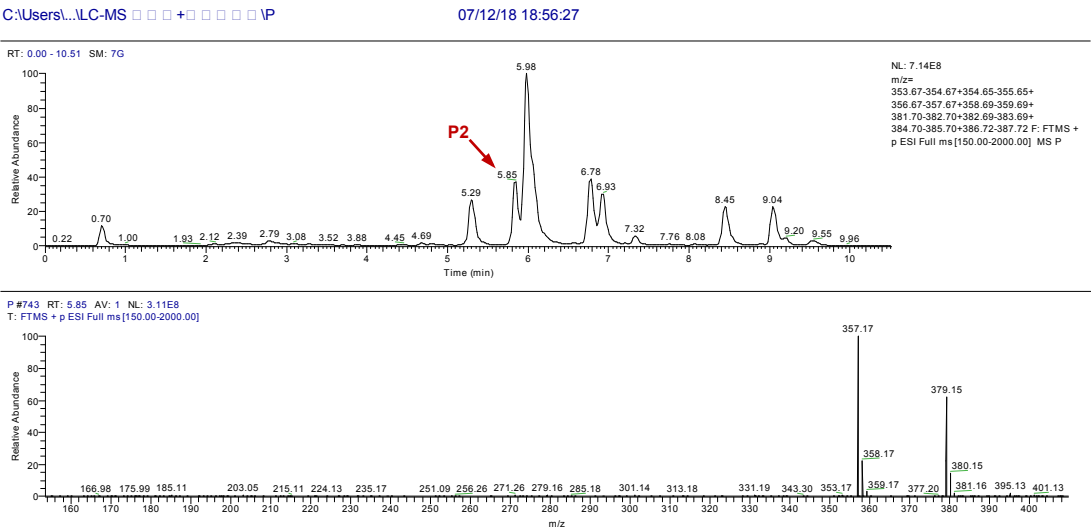
Figure. S1

Mass spectra of MPs

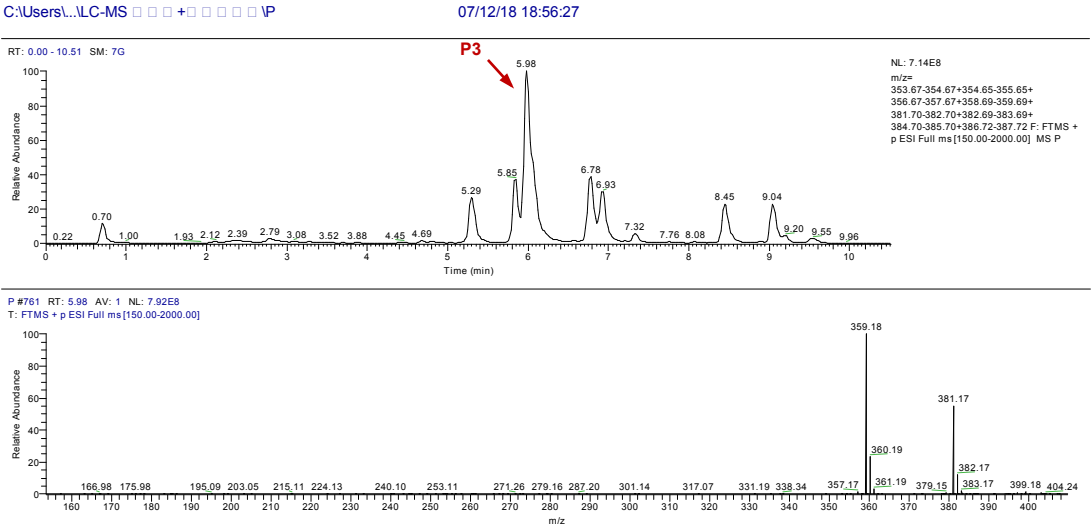
Rubropunctamine [P1]



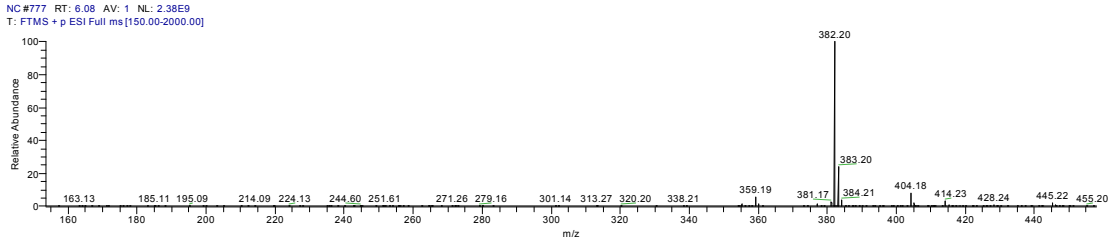
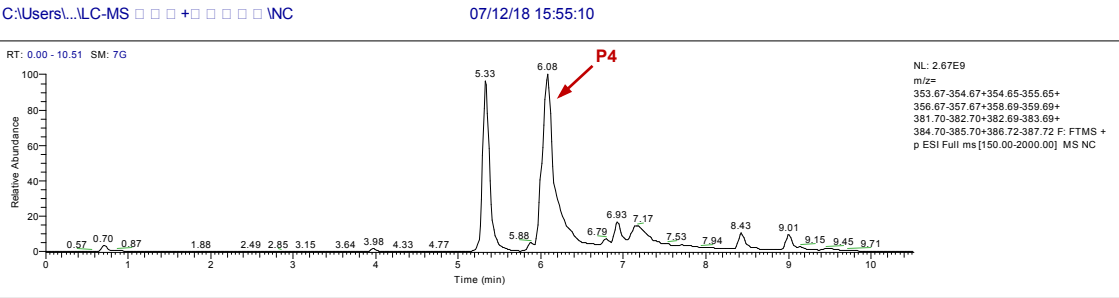
Monasfluore A [P2]



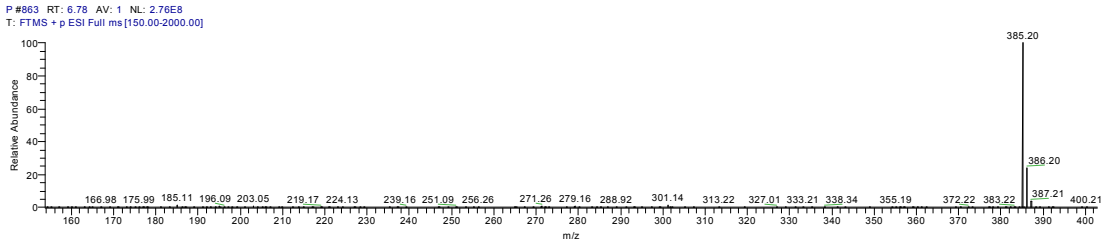
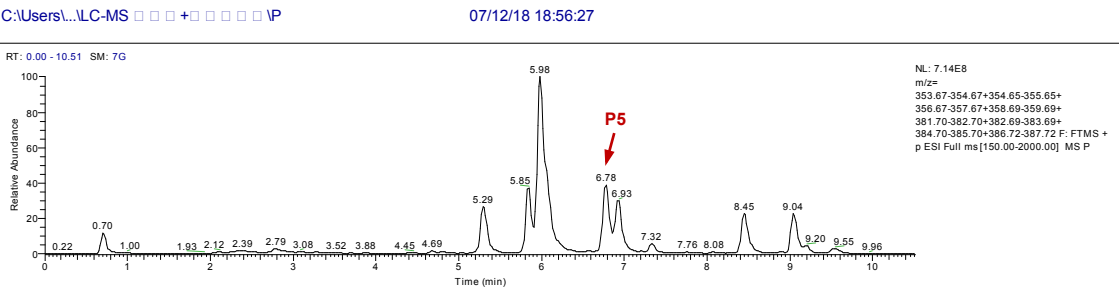
Monascin [P3]



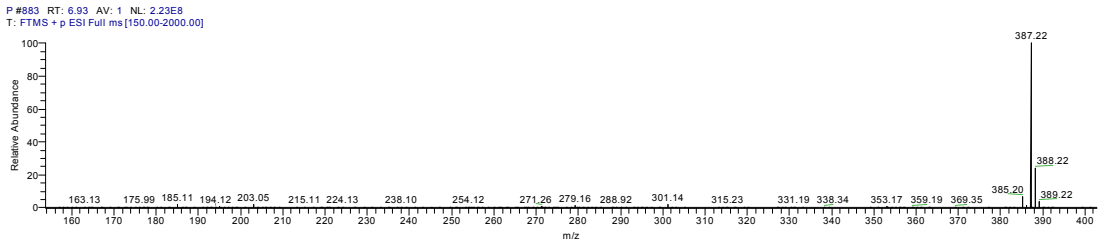
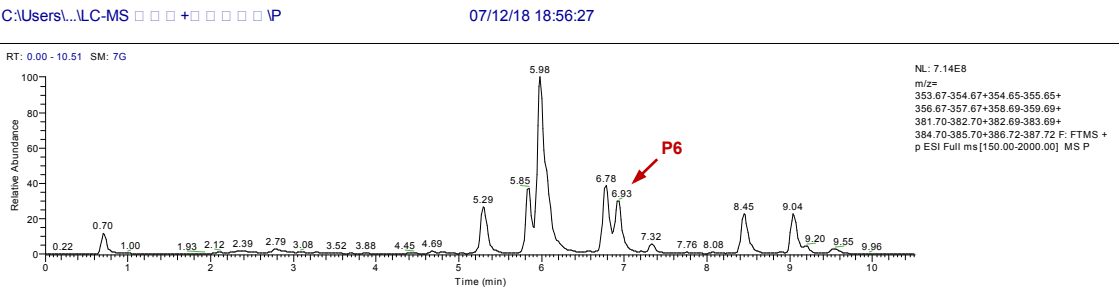
Monascorubramine [P4]



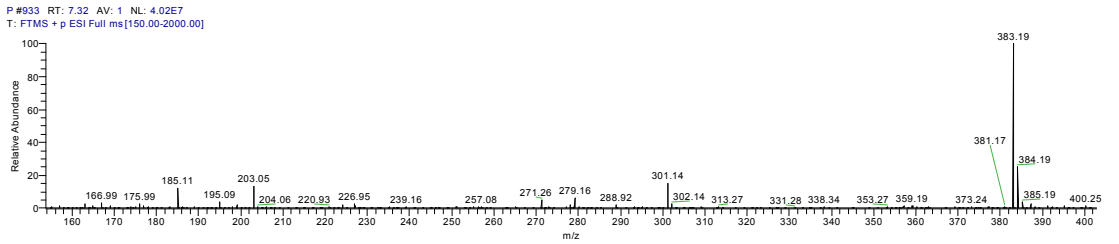
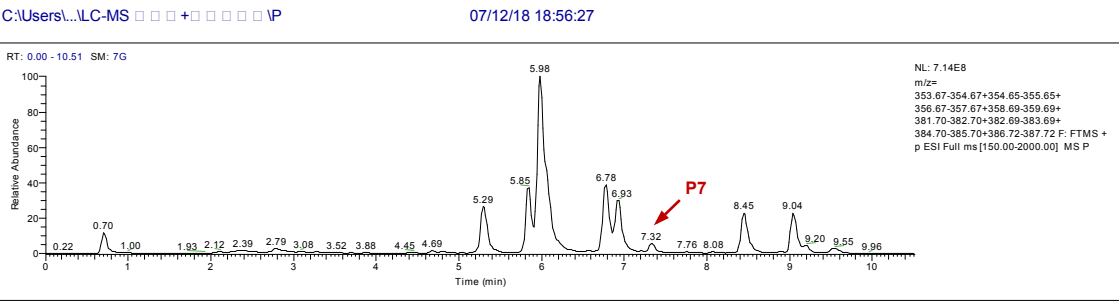
Monasfluore B [P5]



Ankaflavin [P6]



Monascorubrin [P7]



Rubropunctatin [P8]

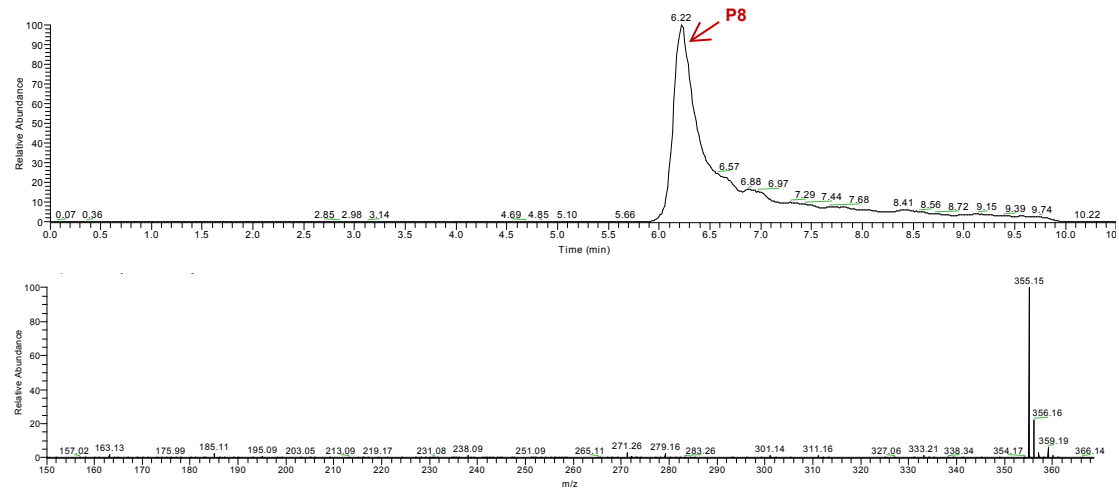


Figure. S2

Distribution of differentially expressed genes (DEGs) between two samples of *M. purpureus*, and correlation comparison between biological replicates. The Spearman correlation coefficients (R2) were calculated.

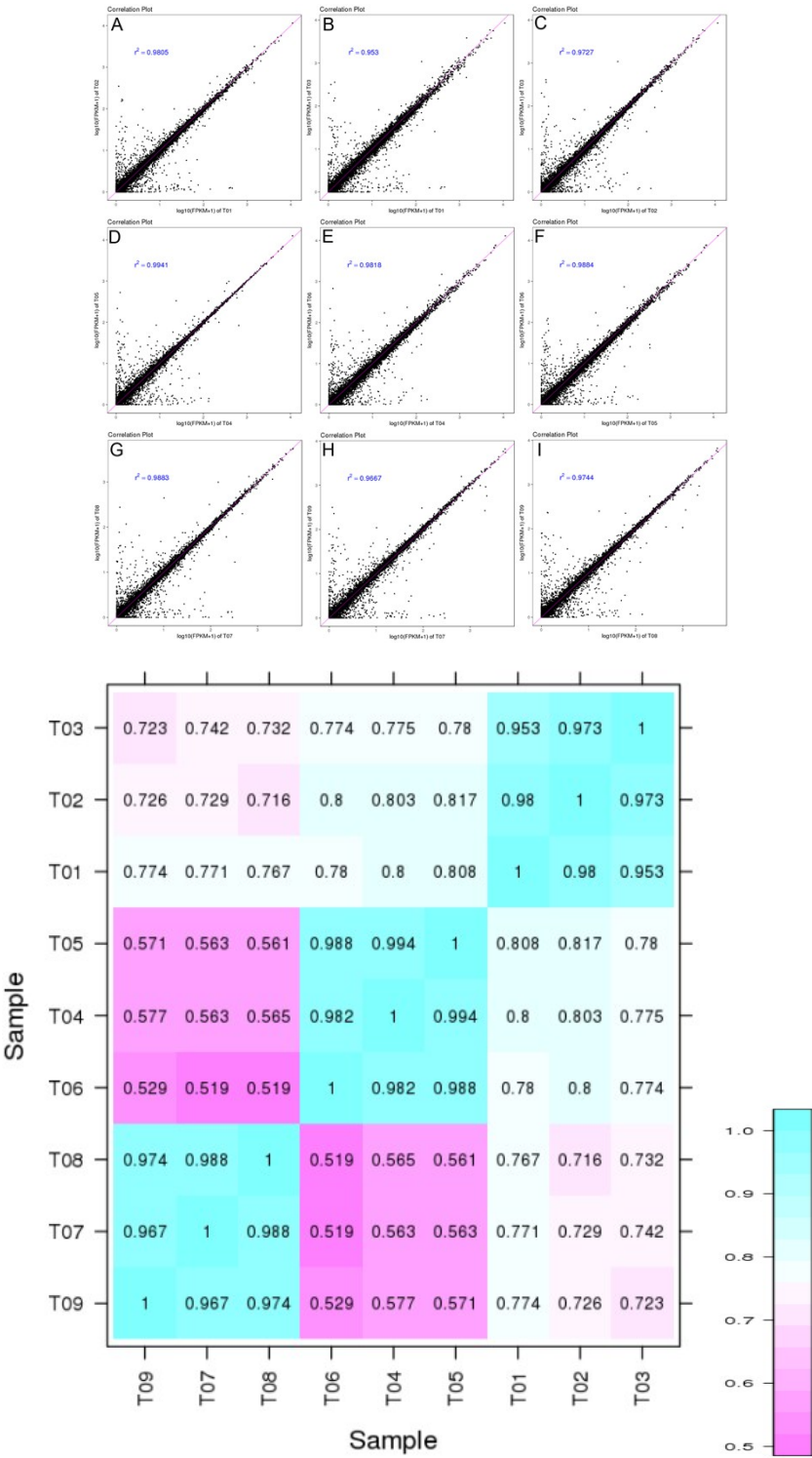


Figure. S3

Venn diagram showing the numbers of differentially expressed genes (DEGs) in the three sets of transcripts obtained from mycelia of *Monascus purpureus* M3103 that were submerged fermented using peptone(M), NH_4Cl (ML) and NH_4NO_3 (MX) as nitrogen sources.

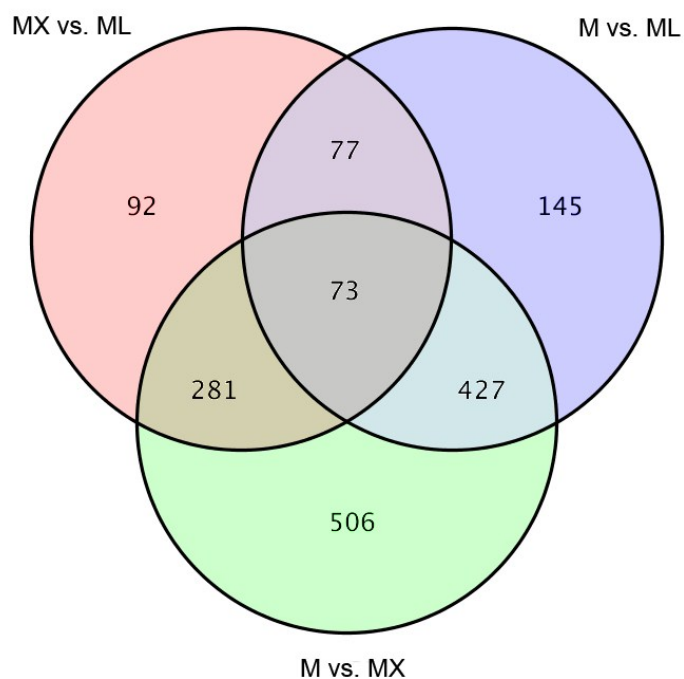


Figure. S4

Chromatogram of citrinin standard.

