

# **Enhanced resistance to heat and fungal infection in transgenic *Trichoderma* via over-expressing the *HSP70* gene**

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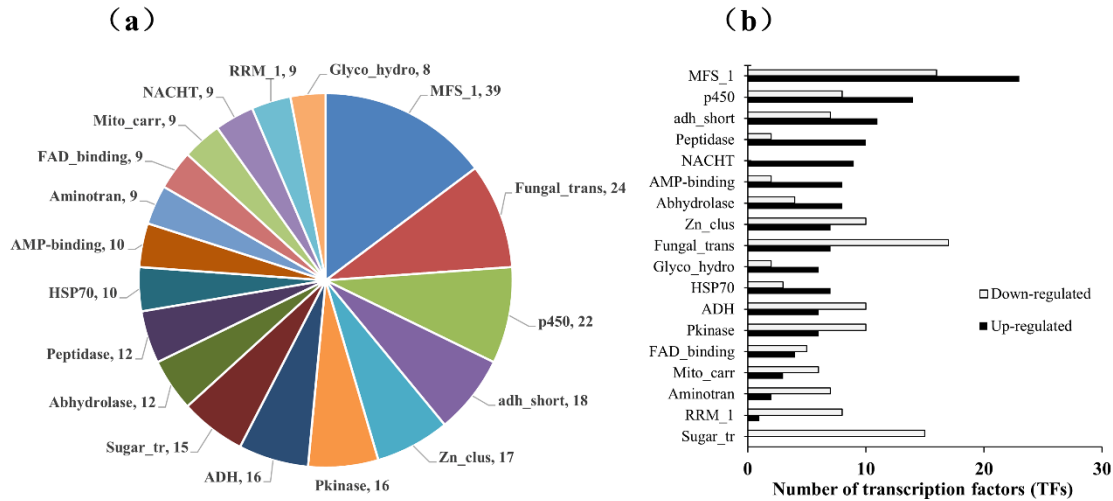
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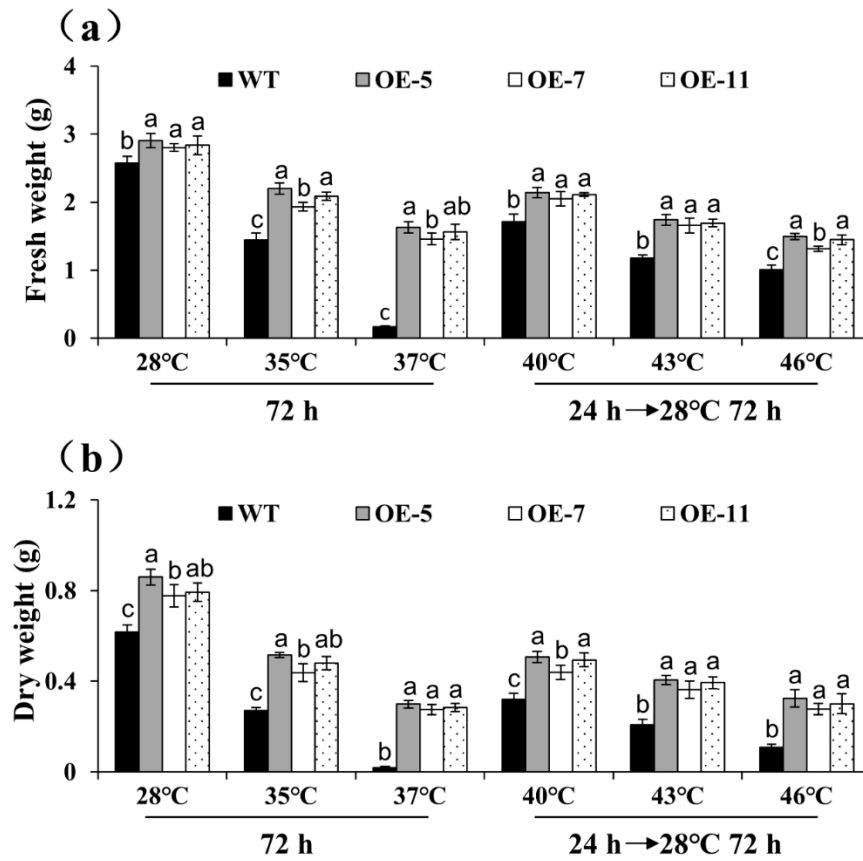
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**Fig. S1** Distribution and expression profiles of transcription factors families in *T. viride* Tv-1511 under heat stress. (a) Distribution of transcription factors families. (b) Number of up-regulated and down-regulated transcription factors. TFs: transcription factors.



**Fig. S2** Effects of heat stress on biomass of TvHSP70-OE engineered and WT strains. WT: wild-type; OE-5, OE-7 and OE-11: transgenic strains with over-expressed *TvHSP70*; Data are presented as mean  $\pm$  S.E. of triplicate experiments; Columns with different letters indicate significant differences at  $P < 0.05$  (Duncan's test).



**Table S1.** Primer sequences used in the experiments

| Gene name        | Forward primer (5'-3')        | Forward primer (5'-3')        |
|------------------|-------------------------------|-------------------------------|
| <i>β-Actin</i>   | TTCGCTCTTCCTCACGC             | GATGTCACGGACGATTTC            |
| A6376            | TCCGAGGTCCAGGCTGATATGAAG      | GTCTCACGCATCTTGGTCAGGATC      |
| A1326            | ATCAAGAAGCACTCCGAGTTCATCAG    | GGTCTCCTCCTCAGCATCCTCATC      |
| A2155            | GCCTAAGAAACAACCTGCCGACTC      | CATACCATGACCAGCACCAGGAAC      |
| A4009            | GACCAGTCCATCACCATTGCTTCC      | TACTTCTCGGAGTCCTCAACCATCTG    |
| A5978            | ATTCTCGGCAAGATGAAGGAGGTTG     | GTTGAAGTAGGCAGGGACAGTAACG     |
| A3581            | ACCTGGAGCACTCACTATACGATACG    | TTGGACAATTCCTGGTTGAAGTAGAGC   |
| A1421            | ACCAACACCCTATAACAGACACAGAC    | GAGAGAGGTTCGAGATGTCGTTTG      |
| A0852            | AGCGAGGATTTACAGCGACCAAAG      | CTTTTCCCTGAGACCGTGGATGAC      |
| <i>TvHSP70</i>   | CGGGATCC ATGTCTATGGGACCAGCCGT | CGGAATTC TTAGTCGACCTCCTCGACGG |
| <i>GLY1</i>      | TCCTGTCCGCAGCATCATTGTTG       | GAATGTCTCGTCCACAGCCACTC       |
| <i>CS</i>        | AGAAGCACGGCAAGACCAAGAAC       | AGGTGGCGGTGTAGTACAGAGTC       |
| <i>ACLY</i>      | CCGTGATGGTGACTGGATCTCTTC      | GTAGCGGCAATCTCCTCGTTGG        |
| <i>ERG4</i>      | CTTCATCGCTTACTTCTCCGCTCTG     | AAGGATGCCAAACATACGAGGGTTC     |
| <i>ERG5</i>      | TGGCGTGAGGCTGAGGAGAAG         | GGTGAAGACAGTCTGGGAGATTTCCG    |
| <i>ERG7</i>      | GCAAGAGTTGTTTGTTCAGCCTAC      | CAGGAGCCAGTTGACCGTGTTG        |
| <i>INO1</i>      | ACTGCCAACACTGAGCGATATGC       | GCGACAGCAAAGACGGTGGAG         |
| <i>IMPA1</i>     | CATGGCTGGCGGCAATCCTG          | ACTCCTCCACAAGCTCCGTCTG        |
| <i>ITR</i>       | AGAGACTGGATGGCGGTGGATG        | TCTGGCATGAAGGCAACAAGAGC       |
| <i>CYP</i>       | CGCCGCAGGAGTGTTCAAG           | CGTTGTCCAGGTCATCGGTTGTC       |
| <i>OMS1</i>      | CCGTCGCCGTGCTGTCTAAC          | GCCATAATAGCCCTTACCGTGTTCC     |
| <i>GT3</i>       | ACGCCTACTCCTCGCCTTCAG         | CGCAGCCATTGGTAAGCCTCTC        |
| <i>SAMS</i>      | GCTCTCCTACGCCATTGGTGTTG       | TCGTCAGAGGTCTTGTCTAGAGGTG     |
| <i>SAMDC</i>     | GTCCGACGCTGTTGATGCCTATC       | TCGTGCCGCAAGTCTTCAAGATG       |
| <i>BIO3</i>      | GCTCACGGCGATTACTTCCAGAC       | TTGAGTCCACCAGGAGGCAGAG        |
| <i>Fe-SOD</i>    | AGGGCACCATCACTGACTCTCTG       | GCCAGCGTTGCCAGTCTTCAG         |
| <i>Cu/Zn-SOD</i> | CTCCAAGCACCACCAGACGTATG       | CGCCGTGGAAGTTGAGCAGAG         |
| <i>CAT</i>       | GATGCCCTCGCCCACTTTGAC         | ATGGAGGTGAGGTGCGTGATGTC       |
| <i>GPX</i>       | ATGTCTTCTGCCACCAACTTCTTG      | GTAGGTGAAGCCGCACTTGAAG        |
| <i>GSS</i>       | AACTGATTGTACCGCCTCCTGTTTC     | ATCTCTCCGCTGCCCTGGTTC         |
| <i>CCD</i>       | GTATGATGCGACGACACCTGAGC       | CCTCCTTCCACCTTGCGATTGC        |
| <i>PheA</i>      | AACACCACCCGTTTCCTCATTATCG     | GGTCCTCGTAGTAGCCTCTCCAAC      |
| <i>MIOX</i>      | ATCCGCTACCACTCGTTCTACCC       | ACGCTAGGAACATCATCACTTGTG      |
| <i>ELO3</i>      | TCCGAATCTGGTGGAAGGAGTGG       | AGTAGGTGTAGGAGGCGAAGTAGAC     |