**Table S1 Characteristics of the laccases od *Ganoderma lucidum***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **laccase** | **Gene number** | **length (amino acids)** | **Signal**  **peptide** | | **Molecular**  **weight (kDa)** | | **PacC binding sites** |
| **Lac1** | **Gl16398** | **520** | | **Y** | | **56.6** | **1** |
| **Lac2** | **Gl21497** | **544** | | **Y** | | **58.9** | **N** |
| **Lac3** | **Gl29486** | **520** | | **Y** | | **56.2** | **N** |
| **Lac4** | **Gl16401** | **528** | | **Y** | | **57.2** | **1** |
| **Lac5** | **Gl17426** | **498** | | **Y** | | **54.4** | **2** |
| **Lac6** | **Gl18428** | **496** | | **Y** | | **53.2** | **1** |
| **Lac7** | **Gl19134** | **614** | | **Y** | | **67.2** | **2** |
| **Lac8** | **Gl22987** | **610** | | **Y** | | **66.4** | **3** |
| **Lac9** | **Gl23477** | **519** | | **Y** | | **56.9** | **1** |
| **Lac10** | **Gl29234** | **541** | | **Y** | | **57.6** | **N** |
| **Lac11** | **Gl29253** | **521** | | **Y** | | **55.2** | **N** |
| **Lac12** | **Gl29490** | **509** | | **Y** | | **54.4** | **3** |
| **Lac13** | **Gl30788** | **559** | | **Y** | | **60.4** | **N** |
| **Lac14** | **Gl15267** | **611** | | **N** | | **65.8** | **1** |
| **Lac15** | **Gl17009** | **580** | | **Y** | | **63.2** | **N** |

Y represents that there is signal peptide in the N terminus of laccase. N represents that there is no cis-acting element of PacC in the promoter of laccase gene. 1-3 represents the numbers of cis-acting elements.

**Table S2** Paired primers for detecting transcript level of laccase genes

|  |  |
| --- | --- |
| Primers | Paired sequences (5′-3′)\* |
| Lac1-F/R | ACATTGCCCTTCTTTTCGC/TCACCCTGGTTCCCTGTAA |
| Lac2--F/R | CCCAGCGTTATTCGTTTGTG/GGATGGAGGTCGGTCTCGT |
| Lac3--F/R | TGCGACCCCAACTACACCT/GCAGTCAGCACGAAAGAAT |
| Lac4--F/R | TGAGCAGGAAGCGAAGAGC/GCACGAGATTCAGAGCGTAGTC |
| Lac5--F/R | TCGCCGCACAGCGTTATTC/CCGTCGTAGCGCAGGATTG |
| Lac6--F/R | TTTCTGCACTCGGCACTCTAT/GGCGAAATGTCCTTGTTACTG |
| Lac7--F/R | CATTCATTGGCACGGGATT/AGTATTGGGAGGCGAGATGG |
| Lac8 -F/R | CAACAAGTCCGCACAGTCGC/CCGTGGAGGTGGAAAGGGT |
| Lac9 -F/R | TGGATAACTATTGGGTCAGGG/CCGACTCGTTCAGCAGCAT |
| Lac10-F/R | GTTAGCCCAGACGGGTACACTC/TGAGGTGGACTTCAGCATCG |
| Lac11-F/R | GCCAGCGTTACTCGTTTGTC/AAGGAGGTGGTGCCGATGTT |
| Lac12-F/R | AGTCACTCAGGGGAAACGC/TTCGCAGTCAAAACAAAGGAG |
| Lac13-F/R | TGATGGCGGCGTGAACTCT/CAGGTTGAGGGCGTAGTCG |
| Lac14-F/R | GGTTTGAAGCACCACCACTC/CCGCTCCTCCAAGACGAAG |
| Lac15-F/R | CACTTGCATGGGCATCAGTT/CGATGTGGCAGTGGAAGAACC |