

Table S2. Ten Ascomycota fungal genomes with high-quality genome annotations were chosen to annotate the *Ceratobasidium* sp. C02 assembly

| Genome | Accession | Reference | Source | Evidence |
|------------------------------|-----------------|---|--------|---|
| <i>Laccaria bicolor</i> | Lacbi2 (16097) | https://doi.org/10.1038/nature06556 | JGI | <i>ab initio</i> 38,913 ESTs protein homology - UniProtKB fungi |
| <i>Mycena indigotica</i> | GCF_014461135.1 | https://doi.org/10.1073/pnas.2010761117 | NCBI | <i>ab initio</i> RNA sequencing protein homology - UniProtKB fungi |
| <i>Coprinopsis cinerea</i> | Copci1 | https://doi.org/10.1073/pnas.1003391107 | JGI | <i>ab initio</i> 5,612 ESTs |
| <i>Schizophyllum commune</i> | Schco3 | https://doi.org/10.1038/nbt.1643 | JGI | <i>ab initio</i> 31,000 ESTs |
| <i>Sparassis crispa</i> | GCF_003851025.1 | https://doi.org/10.1038/s41598-018-34415-6 | NCBI | <i>ab initio</i> RNA sequencing |
| <i>Serpula lacrymans</i> | SerlaS7_9_2 | https://doi.org/10.1126/science.1205411 | JGI | <i>ab initio</i> undisclosed ESTs protein homology - GenBank nr proteins |
| <i>Postia placenta</i> | Pospl1 | https://doi.org/10.1073/pnas.0809575106 | JGI | <i>ab initio</i> 44,520 ESTs protein homology - 'reliable homology-based gene models' |

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|--|-------------|---|-----|---|
| <i>Dichomitus squalens</i> | Dicsqu463_1 | https://doi.org/10.1128/MRA.00264-19 | JGI | <i>ab initio</i> RNA sequencing protein homology - 'homology-based' |
| <i>Agaricus bisporus</i> var. <i>bisporus</i> | 99190 | https://doi.org/10.1073/pnas.1206847109 | JGI | <i>ab initio</i> 79,271 ESTs protein homology - GenBank nr proteins |
