**Table S2** List of validated and incorrect sequences four *Ganoderma* species

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| **Correct name** | **Labeled name** | **Accession number** |
| ***G. sichuanense*** | *G. sichuanense* |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| JF915393 | JF915394 | JF915395 | JF915396 | JF915397 | F915398 | JF915399 | JF915400 | JF915401 |  |
| JF915402 | JF915403 | JF915404 | JF915405 | JF915406 | JF915407 | JF915408 | JN197281 | JN197282 |
| JN197283 | JN197284 | KC505544 | KC662402 | KT318600 | KT318601 | KT318602 | KT318603 | KT693248 |
| KT693249 | KT693250 | KT693251 | KT693252 | KT693253 | KT693254 | KT693255 |

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| KX055552 | JQ781878 | JQ781877 |  |  |

 |
| *G. lucidum* |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AB462322 | AB733122 | AB733174 | AB733175 | AF506371 | DQ424969 | DQ424970 | DQ424971 | DQ424973 |
| DQ424974 | DQ424979 | DQ424980 | DQ424981 | DQ424983 | DQ424984 | DQ424985 | DQ424986 | DQ424987 |
| DQ424988 | DQ424989 | DQ424991 | DQ424992 | DQ424993 | DQ424994 | DQ424997 | DQ425007 | DQ425008 |
| DQ425012 | DQ425013 | DQ425015 | EF188277 | EF188278 | EF188279 | EF188280 | EU021455 | EU021456 |
| EU498091 | EU520137 | EU520155 | EU520235 | EU520247 | FJ379262 | FJ379263 | FJ379265 | FJ463904 |
| FJ463907 | FJ463909 | FJ463910 | FJ463912 | FJ463919 | FJ463921 | FJ463929 | FJ463931 | FJ501553 |
| FJ501554 | FJ501555 | FJ501557 | FJ501559 | FJ501568 | FJ501569 | FJ501576 | FJ501577 | FJ687271 |
| FJ940919 | GU213471 | GU213476 | GU213477 | GU213478 | GU213479 | GU213480 | GU213481 | GU213483 |
| GU213484 | GU213485 | GU213487 | HQ222603 | HQ222604 | HQ235630 | HQ235631 | HQ235632 | JN008869 |
| JN008870 | JN008871 | JN008872 | JN048774 | JN222405 | JN222421 | JN222423 | JN222424 | JN222425 |
| JN222426 | JQ520167 | JQ520168 | JQ520169 | JQ520170 | JQ520171 | JQ520172 | JQ520173 | JQ520174 |
| JQ520175 | JQ520176 | JQ520177 | JQ520178 | JQ520179 | JQ520180 | JQ520181 | JQ520182 | JQ520183 |
| JQ520184 | JQ520188 | JQ520189 | JQ627589 | JQ627590 | JX162754 | JX162755 | JX162756 | JX162757 |
| JX162758 | JX162759 | JX162760 | JX162761 | JX162762 | JX162763 | JX162764 | JX162765 | JX162766 |
| JX162767 | JX162768 | JX162770 | KC311368 | KC311370 | KC311371 | KC414242 | KF146177 | KM269294 |
| KT185665 | KT717953 | KT717954 | KT717955 | KT717956 | KT906367 | KT906368 | KT921216 | KX055533 |
| KX055535 | KX055538 | KX055539 | KX055543 | KX055544 | KX055545 | KX055550 | KX055551 | KX055553 |
| LC068794 |  |  |  |  |

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| AB509616 | AF079584 | AF506372 | AF506373 | AM269772 | AY636058 | AY636059 | AY636068 | AY870653 |
| DQ424975 | DQ424976 | DQ424998 | DQ424999 | DQ425000 | EU021459 | EU021460 | EU021461 | EU021462 |
| FJ263454 | FJ463905 | FJ463906 | FJ463908 | FJ463913 | FJ463915 | FJ463917 | FJ463920 | FJ463923 |
| FJ463924 | FJ463925 | FJ463926 | FJ501561 | FJ655477 | FJ982798 | GQ249880 | GQ249884 | GQ249885 |
| GQ249886 | GU213482 | GU726919 | GU726920 | GU726921 | GU726922 | GU726923 | GU726924 | GU726925 |
| GU726926 | GU726927 | GU726928 | GU726929 | GU726930 | GU726931 | GU726932 | GU726933 | HM053436 |
| HM053438 | HM053439 | HM053440 | HM053441 | HM053442 | HM053443 | HM053444 | HM053445 | HM053446 |
| HM053447 | HM053448 | HM053449 | HM053450 | HM053451 | HM053452 | HM053453 | HM053454 | HM053455 |
| HM053456 | HM053457 | HM053458 | HM053459 | HM053460 | HM053461 | HM053462 | HM053463 | HM053464 |
| HM053465 | HM053466 | HM053467 | HM130706 | HQ589218 | HQ589225 | JF753554 | JN099386 | JN613281 |
| JN692272 | JQ520187 | KF549493  | KF648564 | KF963254 | KF998091 | KF998092 | KF998093 | KF998094 |
| KF998095 | KM503134 | KM655758 | KP886807 | KT997431 | KU194309 | AY456341 | FJ463928 | HM053437 |
| JN588574 | JX270802 | JX270803 |  |  |

 |
| *G. lingzhi* |

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| AB811848 | JQ781855 | JQ781856 | JQ781857 | JQ781858 | JQ781859 | JQ781860 | JQ781861 | JQ781862 |
| JQ781863 | JQ781864 | JQ781865 | JQ781866 | JQ781867 | JQ781868 | JQ781869 | JQ781870 | JQ781871 |
| JQ781872 | JQ781873 | KC222318 | KC415761 | KC511557 | KJ143907 | KJ143908 | KR093032 | KT247417 |
| KU219990 | KU219991 | KU310901 | KX055521 | KX055522 | KX055523 | KX055524 | KX055525 | KX055527 |
| KX055528 | KX055531 | KX055532 | KX055534 | KX055536 | KX055537 | KX055541 | KX055546 | KX055547 |
| KX055548 | KX055555 | KX055562 | KX055563 | LC090753 | LC149597 |

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| AB811852 |  |  |  |  |

 |
| *G. tsugae* |

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| DQ425001 | DQ425004 |  |  |  |

 |
| *G. luteomarginatum* |

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| KP226861 |  |  |  |  |

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| *Ganoderma* sp. |

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| HQ689695 | HQ689696 | HQ689697 | JQ520207 | JQ520210 | JQ520211 | JQ520214 |
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| ***G.* cf. *adspersum*** | *G. adspersum* |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AM269767 | AM269770 | AM269771 | AM906054 | AM906055 | AM906056 | AM906057 | EF060009 | EF060010 |
| EF060011 | EU162053 | FJ655447 | FJ655449 | FJ655451 | FJ655452 | FJ655453 | JN176879 | JN176883 |
| JN176884 | JN176886 | JN176887 | JN176888 | JN176889 | JN176890 | JN176891 | JN176892 | JN176893 |
| JN176894 | JN176898 | JN176901 | JN176902 | JN176903 | JN176904 | JN176905 | JN176906 | JN176907 |
| JN176908 | JN222416 | JN222417 | JN222418 | JN588579 | JN588580 | JN588581 | JN588582 | JN588583 |
| JN588584 | JN588585 | JN588586 | KF605650 | KF605651 | KF605652 | KF975893 | KP941436 | KP941437 |
| KP941438 | KP941439 | KP941440 | KP941441 | KP941442 | X78742/X78763 |

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| GU731555 | FJ655450  | FJ655448 | AJ006685 |  |

 |
| *G. australe* |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AY884182 | AY884183 | AY884184 | FJ655458 | FJ655459 | FJ655460 | FJ655461 | FJ655462 | FJ655463 |
| FJ655464 | FJ655465 | FR686555 |  |  |
|  |  |  |  |  |

 |
| *G. applanatum* |

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| GU731554 | JQ520161 | KR673486 | KR673681 |  |

 |
| *Ganoderma* sp. |

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| AF255101 | AF255104 | AF455397 | AF455510 | EF060008 | EF060012 | FN548165 |
|  |  |  |  |  |

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| Others |

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| --- | --- | --- | --- | --- |
| AY605704 | AY605708 | FJ820612 | KF800469 | KP974213 |

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| ***G.* cf. *applanatum*** | *G. applanatum* |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AY787672 | AY884178 | AY884179 | FJ655454 | FJ655455 | FJ655456 | FJ655457 | FR686556 | GU256764 |
| JN176900 | JN588587 | JQ520162 | JX501311 | KC505588 | KC581319 | KF495001 | KF605647 | KF605648 |
| KF605649 | KF975891 | KF975892 | KJ140577 | KJ668542 | KJ857258 | KJ857259 | KJ857265 | KJ857266 |
| KP941443 | KR673611 | KT318588 | KT318589 | KU219987 | KX055561 |

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| AB811850 | AJ608709 | DQ424996 | DQ425009 | EU232190 | EU232219 | GU213472 | GU213473 | GU731554 |
| HM602034 | HM622152 | JN008873 | JQ520161 | KF494999 | KM609399 | KP794597 | KR673486 | KR673681 |
| KR867655 | KT210090 | KU194312 | AB509681 | AB509663 | AB509495 |

 |
| *G. lipsiense* |

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| EF059994 | EF059995 | EF059996 | EF059997 | EF059998 | EF059999 | EF060000 | EF060001 | EF060002 |
| EF060003 | EF060004 | EF060005  | EF060006 |  |

 |
| *G. adspersum* |

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| FJ655448 | FJ655450 | GU731555 |  |  |

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| *G. oregonense* |

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| JQ520196 |  |  |  |  |

  |
| *Ganoderma* sp. |

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| AF255092 | AF255093 | AF255094 | AF255095 | AF255096 | AF255097 | JQ520206 |

 |
| Others |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| FJ609287 | AY968082 | EU554851 | EU554863 | FJ626936 | FJ197949 | FR750674 | HQ021834 | HQ021835 |
| HQ021975 | HQ022119 | JX675211 | JX675216 | KC785577 | KT334783 | KT334785 | KT334788 | KT334790 |
| DQ421242 | GU083147 | JQ666446 | JQ666457 | JQ666465 | JQ666495 | JQ666507 | JQ666577 | JQ666595 |
| DQ421100 |  |  |  |  |

 |
| ***G.* cf. *gibbosum*** | *G. gibbosum* |

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| AB733121 | AY593854 | AY593855 | AY593856 | AY593857 | EU273513 | EU273514 | EU273555 | EU273557 |
| EU326218 | EU326219 | EU918695 | FJ582638 | KJ195663 | KR673513 | KU055650 | X78741/X78762 |

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| FJ392286 | JN596331 | JN655531 | KJ654372 | KJ654373 | KJ654404 | KJ654405 | KJ654446 | KT318591 |
| KU194307 | KU194311 | KU194326 | KU194347 | AY593858 |

 |
| *G. applanatum* |

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| DQ424996 | DQ425009 | GU213472 | GU213473 | JN008873 | KF494999 | KM609399 |

 |
| *G. australe* |

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| GU213474 | JX195196 | JX195197 | JX195199 | JX195200 |

  |
| *G. fulvellum* |

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| FJ478088 |  |  |  |  |

  |
| *G. lucidum* |

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| AF506372 |  |  |  |  |

  |
| *Ganoderma* sp. |

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| --- | --- | --- | --- | --- |
| AF255105 | AF255114 | HQ891299 |  |  |

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Gray box indicates incorrect sequences.