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

|  |  |  |
| --- | --- | --- |
| **Correct name** | **Labeled name** | **Accession number** |
| ***G. lingzhi*** | *G. sichuanense* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | JF915393 | JF915394 | JF915395 | JF915396 | JF915397 | | JF915398 | 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 |  | |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | | KX055552 | JQ781878 | JQ781877 |  |  | |
| *G. lucidum* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 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 |  | |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 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* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 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 |  |  |  |  | |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | | AB811852 |  |  |  |  | |
| *G. tsugae* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | DQ425001 | DQ425004 |  |  |  | |
| *G. luteomarginatum* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | KP226861 |  |  |  |  | |
| *Ganoderma* sp. | |  |  |  |  |  | | --- | --- | --- | --- | --- | | HQ689695 | HQ689696 | HQ689697 | JQ520207 | JQ520210 | | JQ520211 | JQ520214 |  |  |  | |
| ***G. adspersum*** | *G. adspersum* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 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 | |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | | GU731555 | FJ655450 | FJ655448 | AJ006685 |  | |
| *G. australe* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | AY884182 | AY884183 | AY884184 | FJ655458 | FJ655459 | | FJ655460 | FJ655461 | FJ655462 | FJ655463 | FJ655464 | | FJ655465 | FR686555 |  |  |  | |
| *G. applanatum* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | GU731554 | JQ520161 | KR673486 | KR673681 |  | |
| *Ganoderma* sp. | |  |  |  |  |  | | --- | --- | --- | --- | --- | | AF255101 | AF255104 | AF455397 | AF455510 | EF060008 | | EF060012 | FN548165 |  |  |  | |
| Others | |  |  |  |  |  | | --- | --- | --- | --- | --- | | AY605704 | AY605708 | FJ820612 | KF800469 | KP974213 | |
| ***G. applanatum*** | *G. applanatum* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 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 |  |  | |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 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* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | EF059994 | EF059995 | EF059996 | EF059997 | EF059998 | | EF059999 | EF060000 | EF060001 | EF060002 | EF060003 | | EF060004 | EF060005 | EF060006 |  |  | |
| *G. adspersum* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | FJ655448 | FJ655450 | GU731555 |  |  | |
| *G. oregonense* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | JQ520196 |  |  |  |  | |
| *Ganoderma* sp. | |  |  |  |  |  | | --- | --- | --- | --- | --- | | AF255092 | AF255093 | AF255094 | AF255095 | AF255096 | | AF255097 | JQ520206 |  |  |  | |
| Others | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 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. gibbosum*** | *G. gibbosum* | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | AB733121 | AY593854 | AY593855 | AY593856 | | AY593857 | | | EU273513 | EU273514 | EU273555 | EU273557 | | EU326218 | | | EU326219 | EU918695 | FJ582638 | KJ195663 | | KR673513 | | | KU055650 | X78741/X78762 | | |  | |  | | |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | | FJ392286 | JN596331 | JN655531 | KJ654372 | KJ654373 | | KJ654404 | KJ654405 | KJ654446 | KT318591 | KU194307 | | KU194311 | KU194326 | KU194347 | AY593858 |  | |
| *G. applanatum* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | DQ424996 | DQ425009 | GU213472 | GU213473 | JN008873 | | KF494999 | KM609399 |  |  |  | |
| *G. australe* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | GU213474 | JX195196 | JX195197 | JX195199 | JX195200 | |
| *G. fulvellum* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | FJ478088 |  |  |  |  | |
| *G. lucidum* | |  |  |  |  |  | | --- | --- | --- | --- | --- | | AF506372 |  |  |  |  | |
| *Ganoderma* sp. | |  |  |  |  |  | | --- | --- | --- | --- | --- | | AF255105 | AF255114 | HQ891299 |  |  | |

Gray box indicates incorrect sequences.