Table S1. *Voucher data of sequences acquired from GenBank.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Taxon** | **ID** | **Collection country; reference** | **ITS** | **RPB2** | **mrSSU** |
| ***Dendriscostica*** Moncada & Lücking | | | | | |
| *D. nylanderiana* | Takahashi 2472 (HIRO) | China: Yunnan; unpublished | AB245119 | — | — |
|  | Takahashi 2975 (HIRO) | Japan: Hokkaido, Kamikawa-gun, Shimokawa-cho; unpublished | AB245120 | — | — |
|  | Harada 21782 (CBM-FL) | Taiwan; unpublished | AB245121 | — | — |
| *D. oroborealis* | Tønsberg 20664 | Canada: British Columbia; Tønsberg & Goward 2001 | AF208015 | — | — |
| *D. praetextata* | Takahashi 2493 (HIRO) | China: Yunnan; unpublished | AB245122 | — | — |
| *D. wrightii* | Takahashi 2349 (HIRO) (cyanomorph) | China: Yunnan; Takahashi *et al.* (2006) | AB239339 | — | — |
|  | Takahashi 1815 (HIRO) | Japan: Shizuoka, Mt. Fuji; Takahashi *et al.* (2006) | AB239341 | — | — |
|  | Takahashi 2016 (HIRO) | Japan: Nara, Yoshino-gun, Tenkawa-mura, Mt. Inamuragatake; Takahashi *et al.* (2006) | AB239342 | — | — |
|  | Takahashi 2436 (HIRO) | China: Yunnan; Takahashi *et al.* (2006) | AB239344 | — | — |
| ***Lobariella*** Moncada & Lücking | | | | | |
| *L. angustata* | DNA6193  Vargas & Herrera 310a | Colombia; Moncada *et al.* (2013) | KC011030 | — | — |
| *L. auriculata* | DNA5517  Moncada 3075 | Colombia; Moncada *et al.* (2013) | KC011032 | — | — |
| *L. botryoides* | DNA5380  Moncada s.n. | Colombia; Moncada *et al.* (2013) | KC011033 | — | — |
| *L. crenulata* | DNA6203  Diaz & Soto L9 | Colombia; Moncada *et al.* (2013) | KC011034 | — | — |
| *L. ecorticata* | DNA5516  Moncada 3156 | Colombia; Moncada *et al.* (2013) | KC011035 | — | — |
| *L. flavomedullosa* | DNA5395  Moncada s.n. | Colombia; Moncada *et al.* (2013) | KC011036 | — | — |
|  | DNA5419  Rodriguez & Zarate 37 | Colombia; Moncada *et al.* (2013) | — | — | KC011074 |
| *L. isidiata* | DNA6204  Diaz & Soto L12 | Colombia; Moncada *et al.* (2013) | KC011038 | — | — |
| *L. pallida* | DNA5584  Luecking 33379 | Colombia; Moncada *et al.* (2013) | KC011039 | — | — |
|  | AFTOL-ID 310 | Costa Rica–Cartago; Miadlikowska *et al.* 2006; Schmull *et al.* 2011 | HQ650695 | DQ883752 | DQ912296 |
|  | AFTOL-ID 314 | Costa Rica–Cartago; Miadlikowska *et al.* 2006; Schmull *et al.* 2011 | HQ650696 | DQ883753 | DQ912297 |
| *L. pallidocrenulata* | DNA5582a  Luecking 33371a | Colombia; Moncada *et al.* (2013) | KC011051 | — | KC011075 |
|  | DNA5417  Luecking 33371c | Colombia; Moncada *et al.* (2013) | KC011047 | – | – |
|  | DNA6205  Diaz & Soto L10 | Colombia; Moncada *et al.* (2013) | KC011055 | – | – |
| *L. parmelioides* | DNA6216  Moncada 5351 | Colombia; Moncada *et al.* (2013) | KC011056 | — | — |
| *L. pseudocrenulata* | DNA6176  Vargas & Herrera 309b | Colombia; Moncada *et al.* (2013) | KC011061 | — | — |
| *L. reticulata* | DNA6304  Moncada 4982 | Colombia; Moncada *et al.* (2013) | KC011063 | — | KC011076 |
| *L. sipmanii* | DNA5387  Moncada s.n. | Colombia; Moncada *et al.* (2013) | KC011064 | — | — |
| *L. soredians* | DNA5381  Moncada s.n. | Colombia; Moncada *et al.* (2013) | KC011067 | — | — |
| *L. subexornata* | Nash III 42486 (H) | Mexico: Hidalgo; Högnabba *et al.* (2009) | — | — | EU558804 |
| ***Ricasolia*** | | | | | |
| *R. amplissima* | 1996 Stöcker-Wörgotter 1717 (TUR) (chloromorph) | Norway–Hordaland; Stenroos *et al.* 2003; Högnabba *et al.* 2009 | AF524923 | — | EU558807 |
|  | 1996 Stöcker-Wörgotter 1717 (TUR)(cyanomorph) | Norway–Hordaland; Stenroos *et al.* 2003; Högnabba *et al.* 2009 | AF524924 | — | EU558805 |
|  | 1999 Holien s.n. (TUR) (chloromorph) | Norway; Stenroos *et al.* 2003 | AF524925 | — | — |
|  | 1999 Holien s.n. (TUR) (cyanomorph) | Norway; Stenroos *et al.* 2003 | AF524926 | — | — |
|  | 1996 Stöcker-Wörgotter 1719 (TUR)(cyanomorph) | Norway–Hordaland; Stenroos *et al.* 2003; Högnabba *et al.* 2009 | AF524927 | — | EU558806 |
|  | 1998 Kondratyuk 98112-3A (TUR) | Ukraine; Stenroos *et al.* 2003 | AF524928 | — | — |
|  | 1998 Kondratyuk 98112-3a (TUR) | Ukraine; Stenroos *et al.* 2003 | AF524929 | — | — |
|  | Wedin 6172 (BM) | UK; Wiklund & Wedin 2003 | — | — | AY340500 |
|  | Wedin 6173 (BM) | UK; Wiklund & Wedin 2003 | — | — | AY340501 |
| *R. quercizans* | 1999 Ahti 57089 (H) | Canada–Nova Scotia; Stenroos *et al.* 2003; Högnabba *et al.* 2009 | AF524921 | — | EU558814 |
|  | AFTOL-ID 369 | Lutzoni *et al.* 2004; Schmull *et al.* 2011 | HQ650694 | AY641052 | AY584710 |
| *R. virens* | Wedin 6192 (BM) | Norway; Wiklund & Wedin 2003 | — | — | AY340508 |
|  | Wedin 6192 (BM) | Norway; Tønsberg *et al.* 2016 | KJ577709 | — | — |
|  | Blom V1 (BG) | Norway; Tønsberg *et al.* 2016 | KJ577710 | — | — |
|  | Blom A13 (BG) | Norway; Tønsberg *et al.* 2016 | KJ577711 | — | — |
| ***Yoshimuriella*** Moncada & Lücking | | | | | |
| *Y. fendleri* | 1997 Ribeiro s.n. (TUR) | Brazil: Minas Gerais; Stenroos *et al.* 2003 | AF524915 | — | — |
| *Y. dissecta* | 1997 Stenroos 4786b (TUR) | Guyana; Stenroos *et al.* 2003; Högnabba *et al.* 2009 | AF524920 | — | EU558808 |
| *Y. subdissecta* | Moncada 3152 | Colombia; Moncada *et al.* 2013 | KC011029 | — | KC011073 |

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