

**Table S1** Specimens and sequences for phylogenetic analysis

| Species                               | Specimen No.         | Country    | Collector             | ITS             | nuLSU    | nuSSU    | <i>TEF1-α</i> | <i>RPB2</i> |
|---------------------------------------|----------------------|------------|-----------------------|-----------------|----------|----------|---------------|-------------|
| <i>Flavobathelium epiphyllum</i>      | MPN67                |            |                       |                 | GU327717 | JN887382 | JN887423      | —           |
| <i>Phyllobathelium anomalum</i>       | MPN242               |            |                       |                 | GU327722 | JN887386 | JN887430      | —           |
| <i>Phylloporis</i> cf. <i>obducta</i> | <b>HMAS-L0139218</b> | China      | S.H. Jiang            | <b>MW344124</b> | MN720034 | MN727002 | MN738504      | MN738529    |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139222</b> | China      | S.H. Jiang            | <b>MW344125</b> |          |          |               |             |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139237</b> | China      | S.H. Jiang            | <b>MW344126</b> |          |          |               |             |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139246</b> | China      | S.H. Jiang            | <b>MW344127</b> |          |          |               |             |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139247</b> | China      | S.H. Jiang            | <b>MW344128</b> | MN720035 | MN727003 | MN738505      | MN738530    |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139251</b> | China      | S.H. Jiang            | <b>MW344129</b> |          |          |               |             |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139282</b> | China      | S.H. Jiang            | <b>MW344130</b> |          |          |               |             |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139284</b> | China      | S.H. Jiang            | <b>MW344131</b> |          |          |               |             |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139286</b> | China      | S.H. Jiang            | <b>MW344132</b> | MN720036 | MN727004 | MN738506      | MN738531    |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139324</b> | China      | S.H. Jiang            | <b>MW344133</b> |          |          |               |             |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139339</b> | China      | X.L. Wei & S.H. Jiang | <b>MW344134</b> | MN720037 | MN727005 | MN738507      | MN738532    |
| <i>P.</i> cf. <i>obducta</i>          | <b>HMAS-L0139635</b> | China      | S.H. Jiang            | <b>MW344135</b> | MN720038 | MN727006 | MN738508      | MN738533    |
| <i>P. palmae</i>                      | <b>ISE-33374</b>     | Brazil     | R. Lücking et al.     | <b>MW344136</b> |          |          |               |             |
| <i>P. palmae</i>                      | <b>ISE-33667</b>     | Brazil     | R. Lücking et al.     | <b>MW344137</b> |          |          |               |             |
| <i>P. palmae</i>                      | <b>ISE-33670</b>     | Brazil     | R. Lücking et al.     | <b>MW344138</b> |          |          |               |             |
| <i>P. phyllogena</i>                  | <b>ISE-33944</b>     | Brazil     | R. Lücking et al.     | <b>MW344139</b> | MN720039 | MN727007 | MN738509      | MN738534    |
| <i>Puiggariella confluens</i>         | <b>B600205040</b>    | Guatemala  | R. Lücking et al.     | <b>MW344140</b> |          |          |               |             |
| <i>Pui. confluens</i>                 | <b>B600205073</b>    | Costa Rica | R. Lücking et al.     | <b>MW344141</b> |          |          |               |             |
| <i>Pui. confluens</i>                 | <b>B600205074</b>    | Costa Rica | R. Lücking et al.     | <b>MW344142</b> |          |          |               |             |
| <i>Pui. nemathora</i>                 | <b>ISE-32586</b>     | Brazil     | R. Lücking et al.     | <b>MW344143</b> | —        | MN727009 | MN738510      | —           |
| <i>Pui. nemathora</i>                 | <b>ISE-32794</b>     | Brazil     | R. Lücking et al.     | <b>MW344144</b> | —        | MN727008 | —             | MN738535    |
| <i>Pui. nigrocincta</i>               | <b>HMAS-L0139188</b> | China      | X.Y. Liu              | <b>MW344145</b> |          |          |               |             |
| <i>Pui. nigrocincta</i>               | <b>HMAS-L0139194</b> | China      | X.Y. Liu              | <b>MW344146</b> |          |          |               |             |
| <i>Pui. nigrocincta</i>               | <b>HMAS-L0139287</b> | China      | S.H. Jiang            | <b>MW344147</b> |          |          |               |             |
| <i>Pui. nigrocincta</i>               | <b>HMAS-L0139335</b> | China      | X.L. Wei & S.H. Jiang | <b>MW344148</b> | MN720040 | MN727010 | MN738511      | MN738536    |
| <i>Pui. nigrocincta</i>               | <b>HMAS-L0139350</b> | China      | X.L. Wei & S.H. Jiang | <b>MW344149</b> | MN720041 | MN727011 | MN738512      | MN738537    |
| <i>Pui. nigrocincta</i>               | <b>HMAS-L0139360</b> | China      | X.L. Wei & S.H. Jiang | <b>MW344150</b> |          |          |               |             |
| <i>Pui. nigrocincta</i>               | <b>HMAS-L0139366</b> | China      | X.L. Wei & S.H. Jiang | <b>MW344151</b> |          |          |               |             |
| <i>Pui. nigrocincta</i>               | <b>HMAS-L0139368</b> | China      | X.L. Wei & S.H. Jiang | <b>MW344152</b> |          |          |               |             |
| <i>Pui. nigrocincta</i>               | <b>HMAS-L0139370</b> | China      | X.L. Wei & S.H. Jiang | <b>MW344153</b> |          |          |               |             |

|                                      |                      |        |                       |                 |                 |                 |                 |                 |
|--------------------------------------|----------------------|--------|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <i>Pui. nigrocincta</i>              | <b>HMAS-L0141541</b> | China  | X.L. Wei & S.H. Jiang | <b>MW344154</b> | MN720042        | MN727012        | MN738513        | MN738538        |
| <i>Pui. nigrocincta</i>              | <b>HMAS-L0141544</b> | China  | X.L. Wei & S.H. Jiang | <b>MW344155</b> |                 |                 |                 |                 |
| <i>Pui. nigrocincta</i>              | <b>HMAS-L0141549</b> | China  | X.L. Wei & S.H. Jiang | <b>MW344156</b> |                 |                 |                 |                 |
| <i>Raciborskiella janeirensis</i>    | <b>HMAS-L0130589</b> | China  | J.H. Wang & R.D. Liu  | <b>MW344157</b> | MN720043        | MN727013        | MN738514        | —               |
| <i>Raci. janeirensis</i>             | <b>HMAS-L0137672</b> | China  | J.C. Wei              | <b>MW344158</b> |                 |                 |                 |                 |
| <i>Raci. talaumae</i>                | <b>HMAS-L0139624</b> | China  | S.H. Jiang            | <b>MW344159</b> | MN720044        | MN727014        | MN738515        | —               |
| <i>Raci. talaumae</i>                | <b>HMAS-L0139625</b> | China  | S.H. Jiang            | <b>MW344160</b> |                 |                 |                 |                 |
| <i>Raci. talaumae</i>                | <b>HMAS-L0139626</b> | China  | S.H. Jiang            | <b>MW344161</b> |                 |                 |                 |                 |
| <i>Raci. talaumae</i>                | <b>HMAS-L0139627</b> | China  | S.H. Jiang            | <b>MW344162</b> | MN720045        | MN727015        | MN738516        | —               |
| <i>Raci. talaumae</i>                | <b>HMAS-L0139628</b> | China  | S.H. Jiang            | <b>MW344163</b> |                 |                 |                 |                 |
| <i>Raci. talaumae</i>                | <b>HMAS-L0139629</b> | China  | S.H. Jiang            | <b>MW344164</b> |                 |                 |                 |                 |
| <i>Racoplaca macrospora</i> sp. nov. | <b>HMAS-L0139207</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344165</b> |                 |                 |                 |                 |
| <i>R. macrospora</i> sp. nov.        | <b>HMAS-L0139274</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344166</b> |                 |                 |                 |                 |
| <i>R. macrospora</i> sp. nov.        | <b>HMAS-L0139327</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344167</b> |                 |                 |                 |                 |
| <i>R. macrospora</i> sp. nov.        | <b>HMAS-L0141626</b> | China  | J.H. Wang & R.D. Liu  | <b>MW344168</b> |                 |                 |                 |                 |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0130558</b> | China  | J.H. Wang & R.D. Liu  | <b>MW344169</b> |                 |                 |                 |                 |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0130601</b> | China  | J.H. Wang & R.D. Liu  | <b>MW344170</b> |                 |                 |                 |                 |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0139159</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344171</b> |                 |                 |                 |                 |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0139162</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344172</b> | <b>MW357058</b> | <b>MW375713</b> | <b>MW346600</b> | <b>MW346612</b> |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0139164</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344173</b> | <b>MW357059</b> | <b>MW375714</b> | <b>MW346601</b> | <b>MW346613</b> |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0139170</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344174</b> |                 |                 |                 |                 |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0141589</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344175</b> |                 |                 |                 |                 |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0141590</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344176</b> |                 |                 |                 |                 |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0141595</b> | China  | J.H. Wang & R.D. Liu  | <b>MW344177</b> |                 |                 |                 |                 |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0141602</b> | China  | J.H. Wang & R.D. Liu  | <b>MW344178</b> |                 |                 |                 |                 |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0141613</b> | China  | J.H. Wang & R.D. Liu  | <b>MW344179</b> |                 |                 |                 |                 |
| <i>R. maculatoides</i> sp. nov.      | <b>HMAS-L0141616</b> | China  | J.H. Wang & R.D. Liu  | <b>MW344180</b> |                 |                 |                 |                 |
| <i>R. melanobapha</i>                | <b>HMAS-L0139173</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344181</b> |                 |                 |                 |                 |
| <i>R. melanobapha</i>                | <b>HMAS-L0139275</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344182</b> |                 |                 |                 |                 |
| <i>R. melanobapha</i>                | <b>HMAS-L0139328</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344183</b> |                 |                 |                 |                 |
| <i>R. melanobapha</i>                | <b>HMAS-L0139331</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344184</b> | MN720046        | MN727016        | MN738517        | MN738539        |
| <i>R. melanobapha</i>                | <b>HMAS-L0139623</b> | China  | S.H. Jiang            | <b>MW344185</b> | MN720047        | MN727017        | MN738518        | MN738540        |
| <i>R. melanobapha</i>                | <b>HMAS-L0141593</b> | China  | X.L. Wei & J.H. Wang  | <b>MW344186</b> |                 |                 |                 |                 |
| <i>R. subtilissima</i>               | <b>ISE-32602</b>     | Brazil | R. Lücking et al.     | <b>MW344187</b> | —               | MN727018        | MN738519        | —               |
| <i>Serusiauxiella filifera</i>       | HMAS-L0130625        |        |                       | MN720009        |                 |                 |                 |                 |
| <i>Ser. filifera</i>                 | HMAS-L0130627        |        |                       | MN720010        |                 |                 |                 |                 |

|                                 |                      |          |                       |                 |          |          |          |          |
|---------------------------------|----------------------|----------|-----------------------|-----------------|----------|----------|----------|----------|
| <i>Ser. filifera</i>            | HMAS-L0130629        |          |                       | MN720011        | MN720048 | MN727019 | MN738520 | MN738541 |
| <i>Ser. filifera</i>            | HMAS-L0139219        |          |                       | MN720019        |          |          |          |          |
| <i>Ser. filifera</i>            | HMAS-L0139223        |          |                       | MN720020        |          |          |          |          |
| <i>Ser. filifera</i>            | HMAS-L0139234        |          |                       | MN720022        |          |          |          |          |
| <i>Ser. filifera</i>            | HMAS-L0139270        |          |                       | MN720012        |          |          |          |          |
| <i>Ser. filifera</i>            | HMAS-L0139272        |          |                       | MN720013        |          |          |          |          |
| <i>Ser. filifera</i>            | HMAS-L0139288        |          |                       | MN720021        |          |          |          |          |
| <i>Ser. filifera</i>            | HMAS-L0139298        |          |                       | MN720015        |          |          |          |          |
| <i>Ser. filifera</i>            | HMAS-L0141639        |          |                       | MN720014        |          |          |          |          |
| <i>Ser. filifera</i>            | HMAS-L0141641        |          |                       | MN720016        |          |          |          |          |
| <i>Ser. filifera</i>            | HMAS-L0141644        |          |                       | MN720017        |          |          |          |          |
| <i>Ser. filifera</i>            | HMAS-L0141648        |          |                       | MN720018        | MN720049 | MN727020 | MN738521 | MN738542 |
| <i>Ser. filifera</i>            | HMAS-L0141656        |          |                       | MN720023        | MN720050 | MN727021 | MN738522 | MN738543 |
| <i>Ser. filifera</i>            | HMAS-L0141660        |          |                       | MN720024        |          |          |          |          |
| <i>Ser. flagellata</i>          | HMAS-L0130554        |          |                       | MN720025        |          |          |          |          |
| <i>Ser. flagellata</i>          | HMAS-L0139216        |          |                       | MN720027        |          |          |          |          |
| <i>Ser. flagellata</i>          | HMAS-L0141609        |          |                       | MN720026        |          |          |          |          |
| <i>Ser. sinensis</i>            | HMAS-L0141605        |          |                       | MN720033        |          |          |          |          |
| <i>Ser. sinensis</i>            | HMAS-L0141611        |          |                       | MN720031        | MN720053 | MN727022 | MN738525 | MN738546 |
| <i>Ser. sinensis</i>            | HMAS-L0141612        |          |                       | MN720032        |          |          |          |          |
| <i>Ser. sinensis</i>            | HMAS-L0141614        |          |                       | MN720030        |          |          |          |          |
| <i>Strigula acuticonidiarum</i> | HMAS-L0138045        |          |                       | KY100290        | MK206236 | MK206217 | MK273083 | MK273111 |
| <i>S. acuticonidiarum</i>       | HMAS-L0138046        |          |                       | KY100295        |          |          |          |          |
| <i>S. acuticonidiarum</i>       | HMAS-L0138047        |          |                       | KY100296        |          |          |          |          |
| <i>S. acuticonidiarum</i>       | HMAS-L0138048        |          |                       | KY100291        |          |          |          |          |
| <i>S. acuticonidiarum</i>       | HMAS-L0138049        |          |                       | KY100292        |          |          |          |          |
| <i>S. acuticonidiarum</i>       | HMAS-L0138050        |          |                       | KY100293        |          |          |          |          |
| <i>S. acuticonidiarum</i>       | HMAS-L0138051        |          |                       | KY100294        |          |          |          |          |
| <i>S. albomaculata</i>          | <b>HMAS-L0139202</b> | Cambodia | X.L. Wei              | <b>MW344188</b> |          |          |          |          |
| <i>S. antillarum</i>            | <b>B600205079</b>    | Cuba     | R. Lücking et al.     | <b>MW344189</b> |          |          |          |          |
| <i>S. antillarum</i>            | <b>B600205080</b>    | Cuba     | R. Lücking et al.     | <b>MW344190</b> |          |          |          |          |
| <i>S. antillarum</i>            | <b>B600205082</b>    | Cuba     | R. Lücking et al.     | <b>MW344191</b> |          |          |          |          |
| <i>S. antillarum</i>            | <b>B600205084</b>    | Cuba     | R. Lücking et al.     | <b>MW344192</b> | MN720054 | —        | MN738526 | MN738547 |
| <i>S. cf. atrocarpoides</i>     | <b>HMAS-L0139342</b> | China    | X.L. Wei & S.H. Jiang | <b>MW344194</b> | MN720055 | MN727023 | MN738527 | MN738548 |
| <i>S. cf. atrocarpoides</i>     | <b>HMAS-L0139346</b> | China    | X.L. Wei & S.H. Jiang | <b>MW344195</b> |          |          |          |          |
| <i>S. cf. atrocarpoides</i>     | <b>HMAS-L0139180</b> | China    | X.Y. Liu              | <b>MW344193</b> |          |          |          |          |

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|-----------------------------------|----------------------|-------|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <i>S. cf. atrocarpoides</i>       | <b>HMAS-L0141560</b> | China | X.L. Wei & S.H. Jiang | <b>MW344196</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0130609</b> | China | J.H. Wang & R.D. Liu  | <b>MK206313</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0130611</b> | China | J.H. Wang & R.D. Liu  | <b>MK206314</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0130615</b> | China | J.H. Wang & R.D. Liu  | <b>MK206315</b> | MK206251        | MK206230        | MK273098        | MK273126        |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0139168</b> | China | X.L. Wei & J.H. Wang  | <b>MK206317</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0139206</b> | China | J.C. Wei              | <b>MK206318</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0139208</b> | China | J.C. Wei              | <b>MK206319</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0139258</b> | China | S.H. Jiang            | <b>MK206321</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0139260</b> | China | S.H. Jiang            | <b>MK206322</b> | MK206252        | MK206231        | MK273099        | MK273127        |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0139261</b> | China | S.H. Jiang            | <b>MK206323</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0139262</b> | China | S.H. Jiang            | <b>MK206324</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0139330</b> | China | X.L. Wei & J.H. Wang  | <b>MW344197</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0141580</b> | China | X.L. Wei & J.H. Wang  | <b>MW344198</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L0141581</b> | China | X.L. Wei & J.H. Wang  | <b>MW344199</b> |                 |                 |                 |                 |
| <i>S. cf. macaronesica</i>        | <b>HMAS-L118983</b>  | China | J.C. Wei & W. Guo     | <b>MK206308</b> |                 |                 |                 |                 |
| <i>S. cf. smaragdula</i>          | HMAS-L0130621        |       |                       | KY100298        |                 |                 |                 |                 |
| <i>S. cf. smaragdula</i>          | HMAS-L0138067        |       |                       | KY100300        |                 |                 |                 |                 |
| <i>S. cf. smaragdula</i>          | HMAS-L0138068        |       |                       | KY100299        |                 |                 |                 |                 |
| <i>S. cf. smaragdula</i>          | HMAS-L0139166        |       |                       | KY100296        | MK206235        | MK206216        | MK273082        | MK273110        |
| <i>S. cf. smaragdula</i>          | <b>HMAS-L0141395</b> | China | X.L. Wei & S.H. Jiang | <b>MK206357</b> | MK206234        | MK206215        | MK273081        | MK273109        |
| <i>S. cf. smaragdula</i>          | <b>HMAS-L0141396</b> | China | X.L. Wei & J.H. Wang  | <b>MK206359</b> | MK206233        | MK206214        | MK273080        | MK273108        |
| <i>S. dispersa</i>                | HMAS-L0137212        |       |                       | KX216701        | MK206250        | —               | MK273097        | MK273125        |
| <i>S. dispersa</i>                | HMAS-L0137213        |       |                       | KX216700        |                 |                 |                 |                 |
| <i>S. guangdongensis</i> sp. nov. | <b>HMAS-L0139158</b> | China | X.L. Wei & J.H. Wang  | <b>MW344200</b> |                 |                 |                 |                 |
| <i>S. guangdongensis</i> sp. nov. | <b>HMAS-L0139161</b> | China | X.L. Wei & J.H. Wang  | <b>MW344201</b> |                 |                 |                 |                 |
| <i>S. guangdongensis</i> sp. nov. | <b>HMAS-L0139169</b> | China | X.L. Wei & J.H. Wang  | <b>MW344202</b> | <b>MW357060</b> | <b>MW375715</b> | <b>MW346602</b> | —               |
| <i>S. guangxiensis</i>            | HMAS-L0138040        |       |                       | KY100301        | MK206256        | —               | MK273103        | MK273131        |
| <i>S. guangxiensis</i>            | HMAS-L0138041        |       |                       | KY100304        | MK206257        | —               | MK273104        | MK273132        |
| <i>S. guangxiensis</i>            | HMAS-L0138042        |       |                       | KY100305        |                 |                 |                 |                 |
| <i>S. guangxiensis</i>            | HMAS-L0138044        |       |                       | KY100302        |                 |                 |                 |                 |
| <i>S. intermedia</i> sp. nov.     | <b>HMAS-L0139176</b> | China | X.Y. Liu              | <b>MK206304</b> | <b>MK206254</b> | —               | <b>MK273101</b> | <b>MK273129</b> |
| <i>S. intermedia</i> sp. nov.     | <b>HMAS-L0139177</b> | China | X.Y. Liu              | <b>MK206305</b> |                 |                 |                 |                 |
| <i>S. intermedia</i> sp. nov.     | <b>HMAS-L0139178</b> | China | X.Y. Liu              | <b>MK206306</b> | <b>MK206255</b> | —               | <b>MK273102</b> | <b>MK273130</b> |
| <i>S. laevis</i> sp. nov.         | <b>HMAS-L0139172</b> | China | X.L. Wei & J.H. Wang  | <b>MK206348</b> |                 |                 |                 |                 |
| <i>S. laevis</i> sp. nov.         | <b>HMAS-L0139174</b> | China | X.L. Wei & J.H. Wang  | <b>MK206349</b> |                 |                 |                 |                 |
| <i>S. laevis</i> sp. nov.         | <b>HMAS-L0141592</b> | China | X.L. Wei & J.H. Wang  | <b>MW344203</b> | <b>MK206253</b> | <b>MK206232</b> | <b>MK273100</b> | <b>MK273128</b> |

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|-------------------------------------|----------------------|-----------|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <i>S. laevis</i> sp. nov.           | <b>HMAS-L0141594</b> | China     | X.L. Wei & J.H. Wang  | <b>MW344204</b> |                 |                 |                 |                 |
| <i>S. macrocarpa</i>                | HMAS-L0137662        |           |                       | KY083728        |                 |                 |                 |                 |
| <i>S. macrocarpa</i>                | HMAS-L0137663        |           |                       | KY083729        |                 |                 |                 |                 |
| <i>S. macrocarpa</i>                | HMAS-L0137664        |           |                       | KY083731        |                 |                 |                 |                 |
| <i>S. macrocarpa</i>                | HMAS-L0137666        |           |                       | KY083730        |                 |                 |                 |                 |
| <i>S. macrocarpa</i>                | <b>HMAS-L0139289</b> | China     | S.H. Jiang            | <b>MK206341</b> | MK206241        | MK206222        | MK273088        | MK273116        |
| <i>S. macrocarpa</i>                | <b>HMAS-L0141394</b> | China     | S.H. Jiang            | <b>MK206326</b> | MK206240        | MK206221        | MK273087        | MK273115        |
| <i>S. microcarpa</i> sp. nov.       | <b>HMAS-L0139191</b> | China     | X.Y. Liu              | <b>MW344205</b> | <b>MW357061</b> | <b>MW375716</b> | <b>MW346603</b> | <b>MW346614</b> |
| <i>S. microcarpa</i> sp. nov.       | <b>HMAS-L0139192</b> | China     | X.Y. Liu              | <b>MW344206</b> |                 |                 |                 |                 |
| <i>S. microcarpa</i> sp. nov.       | <b>HMAS-L0139193</b> | China     | X.Y. Liu              | <b>MW344207</b> |                 |                 |                 |                 |
| <i>S. microcarpa</i> sp. nov.       | <b>HMAS-L0139196</b> | China     | X.Y. Liu              | <b>MW344208</b> | <b>MW357062</b> | <b>MW375717</b> | <b>MW346604</b> | <b>MW346615</b> |
| <i>S. microcarpa</i> sp. nov.       | <b>HMAS-L0139199</b> | China     | X.Y. Liu              | <b>MW344209</b> |                 |                 |                 |                 |
| <i>S. microcarpa</i> sp. nov.       | <b>HMAS-L0139200</b> | China     | X.Y. Liu              | <b>MW344210</b> |                 |                 |                 |                 |
| <i>S. microcarpa</i> sp. nov.       | <b>HMAS-L0139201</b> | China     | X.Y. Liu              | <b>MW344211</b> |                 |                 |                 |                 |
| <i>S. microcarpa</i> sp. nov.       | <b>HMAS-L0141585</b> | China     | X.Y. Liu              | <b>MW344212</b> |                 |                 |                 |                 |
| <i>S. microcarpa</i> sp. nov.       | <b>HMAS-L0141588</b> | China     | X.Y. Liu              | <b>MW344213</b> |                 |                 |                 |                 |
| <i>S. nitidula</i>                  | <b>B600205019</b>    | Guatemala | R. Lücking et al.     | <b>MW344214</b> |                 |                 |                 |                 |
| <i>S. nitidula</i>                  | <b>B600205029</b>    | Guatemala | R. Lücking et al.     | <b>MW344215</b> |                 |                 |                 |                 |
| <i>S. nitidula</i>                  | <b>B600205077</b>    | Cuba      | R. Lücking et al.     | <b>MW344216</b> |                 |                 |                 |                 |
| <i>S. nitidula</i>                  | <b>HMAS-L0139343</b> | China     | X.L. Wei & S.H. Jiang | <b>MW344217</b> |                 |                 |                 |                 |
| <i>S. nitidula</i>                  | <b>HMAS-L0139358</b> | China     | X.L. Wei & S.H. Jiang | <b>MW344218</b> | MN788374        | MN788375        | MN793983        | MN793982        |
| <i>S. nitidula</i>                  | <b>HMAS-L0139361</b> | China     | X.L. Wei & S.H. Jiang | <b>MW344219</b> |                 |                 |                 |                 |
| <i>S. nitidula</i>                  | <b>HMAS-L0139367</b> | China     | X.L. Wei & S.H. Jiang | <b>MW344220</b> |                 |                 |                 |                 |
| <i>S. nitidula</i>                  | <b>HMAS-L0141586</b> | China     | X.Y. Liu              | <b>MW344221</b> |                 |                 |                 |                 |
| <i>S. nitidula</i>                  | <b>HMAS-L0141587</b> | China     | X.Y. Liu              | <b>MW344222</b> |                 |                 |                 |                 |
| <i>S. prasina</i>                   | <b>B600205022</b>    | Guatemala | R. Lücking et al.     | <b>MW344223</b> |                 |                 |                 |                 |
| <i>S. prasina</i>                   | <b>B600205024</b>    | Guatemala | R. Lücking et al.     | <b>MW344224</b> |                 |                 |                 |                 |
| <i>S. prasina</i>                   | <b>B600205026</b>    | Guatemala | R. Lücking et al.     | <b>MW344225</b> | —               | MN727024        | MN738528        | —               |
| <i>S. prasina</i>                   | <b>B600205065</b>    | Panama    | R. Lücking et al.     | <b>MW344226</b> |                 |                 |                 |                 |
| <i>S. pseudoantillarum</i> sp. nov. | <b>HMAS-L0130571</b> |           |                       | KY100288        | <b>MW357063</b> | <b>MW375718</b> | <b>MW346605</b> | <b>MW346616</b> |
| <i>S. pseudoantillarum</i> sp. nov. | <b>HMAS-L0130573</b> | China     | J.H. Wang & R.D. Liu  | KY100289        | <b>MK206237</b> | <b>MK206218</b> | <b>MK273084</b> | <b>MK273112</b> |
| <i>S. pseudoantillarum</i> sp. nov. | HMAS-L0137208        |           |                       | KX216697        |                 |                 |                 |                 |
| <i>S. pseudoantillarum</i> sp. nov. | HMAS-L0137209        |           |                       | KX216696        |                 |                 |                 |                 |
| <i>S. pseudoantillarum</i> sp. nov. | HMAS-L0137211        |           |                       | KX216702        |                 |                 |                 |                 |
| <i>S. pseudoantillarum</i> sp. nov. | <b>HMAS-L0139347</b> | China     | X.L. Wei & S.H. Jiang |                 | <b>MK206239</b> | <b>MK206220</b> | <b>MK273086</b> | <b>MK273114</b> |
| <i>S. pseudoantillarum</i> sp. nov. | <b>HMAS-L0139616</b> | Thailand  | W.C. Wang             |                 | <b>MW357064</b> | <b>MW375719</b> | <b>MW346606</b> | <b>MW346617</b> |

|                                       |                      |          |                      |                 |                 |                 |                 |                 |
|---------------------------------------|----------------------|----------|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <i>S. pseudoantillarum</i> sp. nov.   | <b>HMAS-L0139618</b> | Thailand | W.C. Wang            |                 | <b>MW357065</b> | <b>MW375720</b> | <b>MW346607</b> | <b>MW346618</b> |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130553</b> | China    | J.H. Wang & R.D. Liu | <b>MW344227</b> | <b>MW357066</b> | <b>MW375721</b> | <b>MW346608</b> | <b>MW346619</b> |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130560</b> | China    | J.H. Wang & R.D. Liu | <b>MW344228</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130570</b> | China    | J.H. Wang & R.D. Liu | <b>MW344229</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130578</b> | China    | J.H. Wang & R.D. Liu | <b>MW344230</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130591</b> | China    | J.H. Wang & R.D. Liu | <b>MW344231</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130595</b> | China    | J.H. Wang & R.D. Liu | <b>MW344232</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130597</b> | China    | J.H. Wang & R.D. Liu | <b>MW344233</b> | <b>MW357067</b> | <b>MW375722</b> | <b>MW346609</b> | <b>MW346620</b> |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130599</b> | China    | J.H. Wang & R.D. Liu | <b>MW344234</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130602</b> | China    | J.H. Wang & R.D. Liu | <b>MW344235</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130603</b> | China    | J.H. Wang & R.D. Liu | <b>MW344236</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130605</b> | China    | J.H. Wang & R.D. Liu | <b>MW344237</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130607</b> | China    | J.H. Wang & R.D. Liu | <b>MW344238</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0130612</b> | China    | J.H. Wang & R.D. Liu | <b>MW344239</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0139217</b> | China    | X.Y. Liu             | <b>MW344240</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0139292</b> | China    | S.H. Jiang           | <b>MW344241</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0139329</b> | China    | X.L. Wei & J.H. Wang | <b>MW344242</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0139633</b> | China    | S.H. Jiang           | <b>MW344243</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141582</b> | China    | X.L. Wei & J.H. Wang | <b>MW344244</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141596</b> | China    | J.H. Wang & R.D. Liu | <b>MW344245</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141598</b> | China    | J.H. Wang & R.D. Liu | <b>MW344246</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141603</b> | China    | J.H. Wang & R.D. Liu | <b>MW344247</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141604</b> | China    | J.H. Wang & R.D. Liu | <b>MW344248</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141606</b> | China    | J.H. Wang & R.D. Liu | <b>MW344249</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141607</b> | China    | J.H. Wang & R.D. Liu | <b>MW344250</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141608</b> | China    | J.H. Wang & R.D. Liu | <b>MW344251</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141615</b> | China    | J.H. Wang & R.D. Liu | <b>MW344252</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141619</b> | China    | J.H. Wang & R.D. Liu | <b>MW344253</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141620</b> | China    | J.H. Wang & R.D. Liu | <b>MW344254</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141623</b> | China    | J.H. Wang & R.D. Liu | <b>MW344255</b> |                 |                 |                 |                 |
| <i>S. pseudosubtilissima</i> sp. nov. | <b>HMAS-L0141627</b> | China    | J.H. Wang & R.D. Liu | <b>MW344256</b> |                 |                 |                 |                 |
| <i>S. pycnoradians</i> sp. nov.       | <b>HMAS-L0139611</b> | Thailand | W.C. Wang            | <b>MW344257</b> | <b>MW357068</b> | <b>MW375723</b> | <b>MW346610</b> | <b>MW346621</b> |
| <i>S. pycnoradians</i> sp. nov.       | <b>HMAS-L0139615</b> | Thailand | W.C. Wang            | <b>MW344258</b> |                 |                 |                 |                 |
| <i>S. pycnoradians</i> sp. nov.       | <b>HMAS-L0139617</b> | Thailand | W.C. Wang            | <b>MW344259</b> |                 |                 |                 |                 |
| <i>S. pycnoradians</i> sp. nov.       | <b>HMAS-L0141583</b> | Thailand | W.C. Wang            | <b>MW344260</b> |                 |                 |                 |                 |
| <i>S. sinoaustralis</i>               | <b>HMAS-L0137203</b> |          |                      | <b>KX216699</b> |                 |                 |                 |                 |

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|-------------------------------------|----------------------|-------|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <i>S. sinoaustralis</i>             | HMAS-L0137204        |       |                      | KX216698        | MK206249        | —               | MK273096        | MK273124        |
| <i>S. sinoconcreta</i> sp. nov.     | <b>HMAS-L0139630</b> | China | S.H. Jiang           | <b>MW344261</b> |                 |                 |                 |                 |
| <i>S. sinoconcreta</i> sp. nov.     | <b>HMAS-L0139631</b> | China | S.H. Jiang           | <b>MW344262</b> | <b>MW357069</b> | —               | —               | <b>MW346622</b> |
| <i>S. subtilissimoides</i> sp. nov. | <b>HMAS-L0130556</b> | China | J.H. Wang & R.D. Liu | <b>MK206350</b> |                 |                 |                 |                 |
| <i>S. subtilissimoides</i> sp. nov. | <b>HMAS-L0139253</b> | China | S.H. Jiang           | <b>MK206352</b> | <b>MK206248</b> | <b>MK206229</b> | <b>MK273095</b> | <b>MK273123</b> |
| <i>S. subtilissimoides</i> sp. nov. | <b>HMAS-L0139254</b> | China | S.H. Jiang           | <b>MK206353</b> |                 |                 |                 |                 |
| <i>S. subtilissimoides</i> sp. nov. | <b>HMAS-L0139255</b> | China | S.H. Jiang           | <b>MK206354</b> | <b>MW357070</b> | <b>MW375724</b> | <b>MW346611</b> | <b>MW346623</b> |
| <i>S. subtilissimoides</i> sp. nov. | <b>HMAS-L0139256</b> | China | S.H. Jiang           | <b>MK206355</b> | <b>MK206246</b> | <b>MK206227</b> | <b>MK273093</b> | <b>MK273121</b> |
| <i>S. subtilissimoides</i> sp. nov. | <b>HMAS-L0139293</b> | China | S.H. Jiang           | <b>MK206356</b> |                 |                 |                 |                 |
| <i>S. subtilissimoides</i> sp. nov. | <b>HMAS-L0141389</b> | China | J.H. Wang & R.D. Liu | <b>MK206351</b> |                 |                 |                 |                 |
| <i>S. univelbiserialis</i>          | HMAS-L0137656        |       |                      | KY083734        |                 |                 |                 |                 |
| <i>S. univelbiserialis</i>          | HMAS-L0137657        |       |                      | KY083736        | MK206243        | MK206224        | MK273090        | MK273118        |
| <i>S. univelbiserialis</i>          | HMAS-L0137658        |       |                      | KY083738        | MK206245        | MK206226        | MK273092        | MK273120        |
| <i>S. univelbiserialis</i>          | HMAS-L0137659        |       |                      | KY083735        | MK206242        | MK206223        | MK273089        | MK273117        |
| <i>S. univelbiserialis</i>          | HMAS-L0137660        |       |                      | KY083737        | MK206244        | MK206225        | MK273091        | MK273119        |
| <i>Swinscowia jamesii</i>           | MPN548               |       |                      |                 | JN887404        | JN887388        | JN887432        | —               |
| <i>Tenuitholiascus porinoides</i>   | <b>HMAS-L0139638</b> | China | S.H. Jiang           | <b>MK206261</b> | MK206259        | MK352441        | MK273106        | MK273134        |
| <i>Tenuitholiascus porinoides</i>   | <b>HMAS-L0139639</b> | China | S.H. Jiang           | <b>MK206262</b> | MK206258        | MK352442        | MK273105        | MK273133        |
| <i>Tenuitholiascus porinoides</i>   | <b>HMAS-L0139640</b> | China | S.H. Jiang           | <b>MK206263</b> | MK206260        | MK352443        | MK273107        | MK273135        |

<sup>1</sup>The new sequences generated in this study were in bold.