**Supplementary Table 1.** Genetic vouchers and GenBank Accession numbers. Vouchers marked with \* indicate DNA aliquots used by Stech et al. (2006). Vouchers with 4-5 gene sequences as listed in GenBank accessions were used for final analyses and morphological study.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Taxon | DNA number | Voucher | Country | GenBank Accession Numbers |
| *rbc*La | *trn*L-F | *psb*T-*psb*H | *psb*A-*trn*H | *atp*B-*rbc*L |
| *Acrobolbus ciliatus* | LB123 | D.G. Long 34927 (E) | China |  |  |  | JX461170 |  |
| *Acrobolbus ciliatus* | LB143 | D.G. Long 33833 (E) | China |  |  |  | JX461184 |  |
| *Acrobolbus ciliatus*  | LB198 | D.G. Long 34895 (E) | China | JX461080 | JX461110 | JX461153 | JX461218 | JX461040 |
| *Acrobolbus ciliatus* | LB199 | A.J. Sharp 7471 (F) | United States | JX461081 |  |  | JX461219 |  |
| *Acrobolbus concinnus* | LB194 | J.J. Engel 24911 (F) | New Zealand | JX461078 | JX461108 |  |  |  |
| *Acrobolbus concinnus* | LB197 | M.A.M. Renner 5251 (F) | Australia | JX461079 | JX461109 | JX461152 | JX461217 | JX461039 |
| *Acrobolbus ochrophyllus* | LB115 | B. Shaw 13599 (F) | Chile |  |  |  | JX461167 | JX461002 |
| *Acrobolbus ochrophyllus* | LB119 | B. Shaw 13237 (F) | Chile | JX461049 | JX461094 | JX461123 |  | JX461005 |
| *Acrobolbus ochrophyllus* | LB191 | J.J. Engel 26633 (F) | Chile | JX461076 | JX461107 | JX461150 | JX461216 |  |
| *Acrobolbus ochrophyllus* | LB200 | N.J.M Gremmen 94-145 (F) | PrinceEdward Island |  |  |  | JX461220 |  |
| *Acrobolbus ochrophyllus* | LB205 | J.J. Engel 28531 (F) | New Zealand | JX461085 | JX461114 | JX461157 | JX461224 |  |
| *Acrobolbus ochrophyllus* | LB206 | J.J. Engel 28157 (F) | New Zealand | JX461086 |  | JX461158 | JX461225 |  |
| *Acrobolbus sp.* | LB116 | B. Shaw 13898 (F) | Chile |  |  |  | JX461168 | JX461003 |
| *Acrobolbus spinifolius* | LB192 | J.J. Engel 28447 (F) | New Zealand | JX461077 |  | JX461151 |  | JX461038 |
| *Acrobolbus wilsonii* | LB144 | D.G. Long 39345 (E) | Scotland |  | JX461096 | JX461129 |  | JX461016 |
| *Marsupidium epiphytum* | LB187 | J.J. Engel 21928 (F) | New Zealand |  |  | JX461148 | JX461213 | JX461035 |
| *Marsupidium epiphytum* | LB188 | J.J. Engel 26832 (F) | New Zealand |  | JX461105 |  | JX461214 | JX461036 |
| *Marsupidium epiphytum* | LB202 | J.J. Engel/MVK 28333 (F) | New Zealand | JX461083 | JX461112 | JX461155 | JX461222 |  |
| *Marsupidium gradsteinii* | LB182 | Gradstein 5236 (JE) | Guyana |  |  |  | JX461208 |  |
| *Marsupidium knightii* | LB201 | J.J. Engel/MVK 28625 (F) | New Zealand | JX461082 | JX461111 | JX461154 | JX461221 | JX461041 |
| *Marsupidium limbatum* | LB124 | T. Pocs 9654/CH (EGR) | Reunion |  |  |  | JX461171 | JX461008 |
| *Marsupidium limbatum??* | LB120 | M. von Konrat 6391 (F) | Chile |  |  |  |  | JX461006 |
| *Marsupidium limbatum\** | LB176 | G. Hassel de Menendez 13524a (BA) | Chile |  | DQ533929 |  | JX461202 | JX461027 |
| *Marsupidium renifolium* | LB107 | J.J. Engel 25553 (F) | Chile | JX461046 | JX461090 | JX461118 | JX461162 | JX460997 |
| *Marsupidium renifolium* | LB108 | J.J. Engel 26237 (F) | Chile | JX461043 | JX461091 | JX461119 | JX461163 | JX460998 |
| *Marsupidium renifolium* | LB179 | J.J. Engel 25913 (F) | Chile | JX461070 | JX461098 |  | JX461205 | JX461029 |
| *Marsupidium renifolium\** | LB158 | Frey & Schaumann 01 - 05 (F) | Chile | JX461059 | DQ533927 |  | JX461191 |  |
| *Marsupidium sp* | LB129 | L. Briscoe MSp137 (F) | Fiji |  |  |  | JX461174 | JX461009 |
| *Marsupidium sp* | LB131 | L. Briscoe MSp242 (F) | Fiji |  |  | JX461125 | JX461175 |  |
| *Marsupidium sp* | LB132 | L. Briscoe MSP138 (F) | Fiji |  |  |  | JX461176 |  |
| *Marsupidium sp.* | LB203 | M.A.M. Renner s.n. (NSW) | Fiji | JX461084 | JX461113 | JX461156 | JX461223 | JX461042 |
| *Marsupidium sp.* | LB207 | L. Briscoe 11/083 (F) | Fiji | JX461087 |  | JX461159 | JX461226 |  |
| *Marsupidium sp. nov.* | LB105 | J.J. Engel 25717 (F) | Chile | JX461045 | JX461089 | JX461116 | JX461161 | JX460995 |
| *Marsupidium sp. nov.* | LB189 | W. Buck 43508 (F) | Chile | JX461075 | JX461106 | JX461149 | JX461215 | JX461037 |
| *Marsupidium surculosum* | LB139 | B. Shaw 6557 (DUKE) | Australia (Tasmania) |  |  |  | JX461180 | JX461013 |
| *Marsupidium surculosum* | LB183 | J.J. Engel 21271 (F) | New Zealand | JX461072 | JX461101 |  | JX461209 | JX461032 |
| *Marsupidium surculosum* | LB184 | J.J. Engel 26972 (F) | New Zealand | JX461073 | JX461102 | JX461145 | JX461210 | JX461033 |
| *Tylimanthus abbreviatus\** | LB163 | Scott s.n. (B) | Australia |  | DQ533930 |  | JX461194 |  |
| *Tylimanthus andinopatagonicus* | LB125 | W. Frey & F. Schaumann 01-195a (F) | Chile |  |  | JX461124 | JX461172 |  |
| *Tylimanthus andinopatagonicus\** | LB159 | Frey & Schaumann 01 - 195a (F) | Chile |  | DQ533923 | JX461134 | JX461192 | JX461021 |
| *Tylimanthus andinopatagonicus\** | LB166 | Frey & Schaumann 01 - 374a (F) | Chile | JX461062 | DQ533925 |  |  |  |
| *Tylimanthus andinopatagonicus\** | LB171 | Frey & Schaumann 01 - 367c (F) | Chile |  | DQ533924 |  | JX461198 | JX461024 |
| *Tylimanthus azoricus\** | LB156 | Sergio 11826 (LISU) | Azores | JX461058 | DQ533913 | JX461133 | JX461189 |  |
| *Tylimanthus azoricus\** | LB157 | Sergio 11810 (LISU) | Azores |  | DQ533932 |  | JX461190 |  |
| *Tylimanthus azoricus\** | LB167 | Sergio & Dias 4555 (LISU) | Azores |  |  |  | JX461195 |  |
| *Tylimanthus coadunatus* | LB137 | B. Shaw 6292 (DUKE) | Australia |  |  |  | JX461178 | JX461011 |
| *Tylimanthus diversifolius* | LB136 | B. Shaw 6298 (DUKE) | Australia |  |  |  | JX461177 | JX461010 |
| *Tylimanthus flavicans* | LB104 | J.J. Engel 26381 (F) | Chile | JX461044 | JX461088 | JX461115 |  | JX460994 |
| *Tylimanthus flavicans* | LB106 | J.J. Engel 26363 (F) | Chile |  |  | JX461117 | JX461160 | JX460996 |
| *Tylimanthus flavicans\** | LB161 | Frey & Schaumann 01 - 372c (F) | Chile |  | DQ533920 |  |  |  |
| *Tylimanthus kunkelii\** | LB160 | Frey & Frey 94-54/55 (STU) | Chile | JX461060 | DQ533921 | JX461135 |  | JX461022 |
| *Tylimanthus kunkelii\** | LB175 | G. Hassel de Menendez 12904 (BA) | Chile |  | DQ533933 |  |  |  |
| *Tylimanthus laxus* | LB141 | Schäfer-Verwimp & M. Nebel 32025 (?) | Ecuador | JX461053 | JX461095 | JX461128 | JX461182 | JX461015 |
| *Tylimanthus laxus* | LB142 | Schäfer-Verwimp & Verwimp 22378 (?) | Guadeloupe | JX461054 |  |  | JX461183 |  |
| *Tylimanthus laxus\** | LB162 | Holz CR00-197 (B) | Costa Rica | JX461061 | DQ533908 | JX461136 | JX461193 |  |
| *Tylimanthus madeirensis* | LB122 | T.L. Blockeel 22/432 (?) | Madeira | JX461050 |  |  |  | JX461007 |
| *Tylimanthus madeirensis*  | LB140 | Schäfer-Verwimp & Verwimp 26034 (?) | Madeira | JX461052 |  | JX461127 | JX461181 | JX461014 |
| *Tylimanthus madeirensis\** | LB151 | Sim-Sim et al 27.7.03 (LISU) | Madeira | JX461056 | DQ533914 | JX461130 | JX461186 | JX461018 |
| *Tylimanthus madeirensis\** | LB155 | Sim-Sim 6.8.04 (LISU) | Madeira | JX461057 | DQ533915 | JX461132 | JX461188 | JX461020 |
| *Tylimanthus madeirensis\** | LB169 | Stech 04-509 (L) | Madeira |  | DQ533916 | JX461137 | JX461196 | JX461023 |
| *Tylimanthus pseudosaccatus* | LB145 | S. and T. Pocs and P.J. Dalton 0086/U (F?) | Australia (Tasmania) | JX461055 |  |  | JX461185 | JX461017 |
| *Tylimanthus ruwenzorensis\** | LB172 | Szabo 9638/CC (EGR) | Reunion | JX461065 | DQ533909 | JX461139 | JX461199 | JX461025 |
| *Tylimanthus ruwenzorensis\** | LB173 | Probst 9638/CC (EGR) | Reunion | JX461066 | DQ533910 | JX461140 | JX461200 | JX461026 |
| *Tylimanthus ruwenzorensis\** | LB174 | Pocs 9503/Y (EGR) | Reunion | JX461067 | DQ533911 | JX461141 | JX461201 |  |
| *Tylimanthus ruwenzorensis\** | LB177 | Mueller B608 (DR) | Equatorial Guinea | JX461068 | DQ533912 |  | JX461203 | JX461028 |
| *Tylimanthus saccatus* | LB138 | B. Shaw 6294 (DUKE) | Australia (Tasmania) | JX461051 |  | JX461126 | JX461179 | JX461012 |
| *Tylimanthus saccatus* | LB178 | B. Shaw 6318 (DUKE) | Australia (Tasmania) | JX461069 | JX461097 | JX461142 | JX461204 |  |
| *Tylimanthus saccatus\** | LB152 | Frey & Pfeiffer 98-Mo41 (Frey) (STU?) | New Zealand |  | DQ533918 |  |  |  |
| *Tylimanthus saccatus\** | LB153 | Pfeiffer 98-T198 (Frey) (STU?) | New Zealand |  | DQ533917 |  | JX461187 | JX461019 |
| *Tylimanthus saccatus\** | LB185 | J.J. Engel 28427 (F) | New Zealand | JX461074 | JX461103 | JX461146 | JX461211 | JX461034 |
| *Tylimanthus saccatus\** | LB186 | J.J. Engel 24870 (F) | New Zealand |  | JX461104 | JX461147 | JX461212 |  |
| *Tylimanthus silvaticus* | LB126 | J.J. Engel 4109 F | Chile |  |  |  | JX461173 |  |
| *Tylimanthus sp.\** | LB168 | Frey & Frey 94-52 (Frey) | New Zealand | JX461063 |  |  |  |  |
| *Tylimanthus tenellus\** | LB154 | Pfeiffer 98-T197 (Frey) | New Zealand |  | DQ533919 | JX461131 |  |  |
| *Tylimanthus urvilleanus* | LB109 | J.J. Engel 26269 (F) | Chile |  |  |  | JX461164 |  |
| *Tylimanthus urvilleanus* | LB110 | J.J. Engel 25962 (F) | Chile |  | JX461092 |  | JX461165 | JX460999 |
| *Tylimanthus urvilleanus* | LB113 | M. von Konrat 6505 (F) | Chile |  |  | JX461120 |  | JX461000 |
| *Tylimanthus urvilleanus* | LB114 | M. von Konrat 6467 (F) | Chile | JX461047 |  | JX461121 | JX461166 | JX461001 |
| *Tylimanthus urvilleanus* | LB118 | B. Shaw 14270 (F) | Chile | JX461048 | JX461093 | JX461122 | JX461169 | JX461004 |
| *Tylimanthus urvilleanus* | LB180 | J.J. Engel 25962 (F) | Chile |  | JX461099 | JX461143 | JX461206 | JX461030 |
| *Tylimanthus urvilleanus\** | LB170 | Frey & Schaumann 01 - 44b (F) | Chile | JX461064 | DQ533926 | JX461138 | JX461197 |  |
| *Tylimanthus viridis* | LB181 | B. Shaw 13721 (F) | Chile | JX461071 | JX461100 | JX461144 | JX461207 | JX461031 |