**Supplementary Material 1.** DNA vouchers and GenBank accession numbers. New sequences and types in bold.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **DNA Voucher** | **Species** | **Collector number (hb Wheeler unless specified)** | **Locality** | **nuITS** | **nuLSU** | **mtSSU** | **MCM7** | **RPB2** |
| TW213 | *Aspicilia angelica* | Wheeler 5468 | Montana, USA | MW435332 | MW447407 | MW424813 | MW435341 | na |
| TW278 | *A. angelica* | Wheeler 3535 | Montana, USA | **PP965029** | **PP965095** | **PP971393** | **PP952648** | na |
| TW249 | *A. angelica* | Wheeler 2954 | Montana, USA | **PP965026** | **PP965091** | **PP971368** | **PP952635** | na |
| TW258 | *A. angelica* | Wheeler 7208 | Montana, USA | **PP965006** | **PP965074** | **PP971394** | **PP952639** | **PP266227** |
| TW247 | *A. angelica* | Wheeler 6167 | Montana, USA | **PP965024** | **PP965094** | **PP971371** | **PP952633** | na |
| TW248 | *A. angelica* | Wheeler 6036 | Montana, USA | **PP965025** | **PP965093** | **PP971372** | **PP952634** | na |
| TW250 | *A. angelica* | Wheeler 5408 | Montana, USA | **PP965027** | **PP965092** | **PP971369** | **PP952636** | na |
| TW338 | *A. angelica* | Knudsen 9996 (UCR) | California, USA | **PP975029** | **PP965079** | **PP971356** | **PP952679** | **PP266228** |
| TW212 | *A. arizonica* | Wheeler 7212 | Montana, USA | **PP965030** | **PP978587** | **PP971399** | **PP952615** | na |
| TW231 | *A. arizonica* | Wheeler 7152 | Montana, USA | **PP965002** | **PP965070** | **PP971355** | **PP952625** | **PP266229** |
|  | *A.* aff. *arizonica* (as *A. caesiocinerea*) | AFTOL 653 | na | HQ650636.1 | DQ986778.1 | DQ986892.1 | na | DQ992469.1 |
|  | *A.* aff. *arizonica* (as *A. cinerea*) | AFTOL 647 | na | HQ650637.1 | DQ986779.1 | DQ986890.1 | na | DQ992468.1 |
| TW224 | *A. fumosa* | Wheeler 3844 | Montana, USA | MW447395 | MW447410 | MW424816 | MW435344 | na |
| TW223 | *A. fumosa* | Wheeler 6802 | Montana, USA | **PP965000** | **PP965068** | **PP971354** | **PP952620** | **PP266243** |
| TW228 | *A. fumosa* | Wheeler 6820 | Montana, USA | **PP965031** | **PP978588** | **PP971396** | **PP952623** | na |
| TW336 | *A. fumosa* | Knudsen 16514 (UCR) | California, USA | **PP965032** | **PP978589** | **PP971402** | **PP952677** | na |
| TW235 | *A. fumosa* | Wheeler 6699 | Montana, USA | **PP965004** | **PP965072** | **PP971350** | **PP952626** | **PP266244** |
| TW264 | *A. fumosa* | Wheeler 7228 | Montana, USA | **PP965033** | **PP978590** | **PP971373** | **PP952642** | na |
| TW281 | *A. fumosa* | Wheeler 5934 | Montana, USA | **PP965034** | **PP965096** | **PP971374** | **PP952651** | na |
|  | *A. olivaceobrunnea* (as *A. contorta*) | AFTOL 1358 | na | HQ650638.1 | DQ986782.1 | DQ986876.1 | na | DQ992470.1 |
| TW352 | *A. olivaceobrunnea* | Owe-Larsson 8771 **(TYPE-ASU)** | Arizona, USA | **PP965013** | **PP965084** | **PP971361** | **PP952687** | **PP266235** |
| TW266 | *A. boykinii* | Wheeler 7249 | Montana, USA | **PP965036** | **PP965099** | **PP971377** | **PP952643** | na |
| TW282 | *A. boykinii* | Wheeler 7273 | Montana, USA | **PP965035** | **PP965097** | **PP971375** | **PP952652** | na |
| TW277 | *A. boykinii* | Wheeler 7274 | Montana, USA | MW447394 | MW447409 | MW424815 | MW435343 | **PP266236** |
| TW313 | *A. boykinii* | Wheeler 7263 | Montana, USA | **PP975030** | **PP965098** | **PP971376** | **PP952671** | na |
| TW315 | *A. nashii* | Wheeler 7335 | Montana, USA | **PP965037** | **PP965100** | **PP971378** | **PP952672** | na |
| TW229 | *A. nashii* | Wheeler 5865 | Montana, USA | **PP965001** | **PP965069** | **PP971349** | **PP952624** | **PP266240** |
| TW274 | *A. nashii* | Wheeler 7259 | Montana, USA | **PP975031** | **PP965076** | **PP971403** | **PP952646** | **PP266241** |
| TW350 | *A. nashii* | Nash 14696-b (**TYPE-ASU**) | Baja California, Mexico | **PP965014** | na | na | **PP952686** | **PP266238** |
| TW245 | *A. knudsenii* | Wheeler 6798 | Montana, USA | MW447392 | MW447406 | MW424812 | MW435340 | **PP266233** |
| TW343 | *A. knudsenii* | Björk 23423 | Oregon, USA | **PP965010** | **PP965081** | **PP971358** | **PP952682** | **PP266234** |
| TW348 | *A. phaea* | Wheeler 7366 | Montana, USA | MZ536835.1 | **PP978591** | na | **PP952685** | **PP266230** |
| TW347 | *A. confusa* | Owe-Larsson 9095 **(ISOTYPE-ASU)** | California, USA | **PP965012** | **PP965083** | **PP971360** | **PP952684** | **PP266231** |
| TW329 | *A.* aff. *confusa* | Knudsen 10075 (UCR) | California, USA | **PP965038** | **PP965101** | **PP971379** | **PP952675** | na |
|  | *A. lutzoniana* | Rodriguez-Flakus 3779 (KRAM) | La Paz, Bolivia | OQ586174.1 | OQ586166.1 | OQ586382.1 | na | na |
|  | *A. lutzoniana* | Rodriguez-Flakus 4025 **(TYPE-KRAM)** | La Paz, Bolivia | OQ586176.1 | OQ586169.1 | OQ586385.1 | na | na |
| TW334 | *A. pacifica* | Knudsen 9241 (UCR) | California, USA | MW447386 | MW447400 | MW424806 | MW435334 | na |
| TW230 | *A. santamonicae* | Wheeler 6648 | California, USA | MW447388 | MW447402 | MW424808 | MW435336 | **PP266242** |
| TW220 | *A. aurantiaca* | Wheeler 7091 | California, USA | MW447387 | MW447401 | MW424807 | MW435335 | **PP266232** |
| TW272 | *A. indeterminata* sp. nov. | Wheeler 7241 | Montana, USA | **PP965017** | **PP965086** | **PP971363** | **PP952645** | na |
| TW241 | *A. indeterminata* sp. nov. | Wheeler 5460 **(TYPE-ASU)** | Montana, USA | **PP965005** | **PP965073** | **PP971351** | **PP952630** | **PP266237** |
| TW263 | *A. suavis* sp. nov. | Wheeler 7226 **(TYPE-ASU)** | Montana, USA | **PP965040** | **PP978592** | **PP971381** | **PP952641** | na |
| TW316 | *A. suavis* sp. nov. | Wheeler 7345 | Montana, USA | **PP965039** | **PP978593** | **PP971380** | **PP952673** | na |
| TW232 | *A. verrucigera* | Wheeler 3439 | Montana, USA | **PP965003** | **PP965071** | **PP971397** | na | **PP266239** |
|  | *A. verrucigera* | Kukwa 19550 (UGDA) | Bory Tucholskie, Poland | OP700455.1 | na | OP737751.1 | na | na |
| TW260 | *A. malvinae* | Fryday 11433 (MSC) | East Falkland, Falkands | MW447393 | MW447408 | MW424814 | MW435342 |  |
|  | *A. cuprea* | Owe-Larsson 9112 (UPS) | California, USA | EU057902.1 | HM060750.1 | HM060712.1 | na | na |
| TW331 | *A. cuprea* | Knudsen 16336 (UCR) | California, USA | MW447385 | MW447399 | MW424805 | MW435333 | **na** |
| TW337 | *A. cuprea* | Knudsen 13050 (UCR) | California, USA | **PP964983** | **PP965053** | **PP971332** | **PP952678** | na |
|  | *A. cyanescens* | Owe-Larsson 9151 (UPS) | California, USA | EU057904.1 | HM060745.1 | HM060707.1 | na | na |
| TW210 | *A. cinerea* | Wheeler 7214 | Montana, USA | MW447398 | MW447413 | MW424819 | MW435347 | **PP266226** |
| TW251 | *A. cinerea* | Wheeler 4890 | Alaska, USA | **PP965042** | **PP965104** | **PP971383** | **PP952637** | na |
| TW285 | *A. cinerea* | Wheeler 7232 | Alaska, USA | **PP965043** | **PP965105** | **PP971384** | **PP952655** | na |
|  | *A. humida* | BDNA-L-0000711 (hb unknown) | Korea | MW832806.1 | MW832827.1 | MW832824.1 | na | na |
| TW219 | *A. cinerea* | Wheeler 6277 | Finnmark, Norway | MW447391 | **PP965054** | MW424811 | MW435339 | na |
|  | *A. dudinesis* | Nordin 6036 (UPS) | Torne Lappmark, Sweden | EU057906.1 | HM060748.1 | HM060710.1 | na | na |
| TW293 | *A. subradians* | Wheeler 5044 | Alaska, USA | **PP965041** | **PP965103** | **PP971382** | **PP952661** | na |
| TW341 | *A. subradians* | Wheeler 5070 | Alaska, USA | **PP965009** | **PP965080** | **PP971357** | **PP952680** | **PP266225** |
|  | *A. epiglypta* | Nordin 6303 (UPS) | Västergötland, Sweden | EU057907.1 | HM060756.1 | HM060718.1 | na | na |
| TW276 | *A. epiglypta* | Nelson s.n. | Hoffellsjokull, Iceland | MW447396 | MW447411 | MW424817 | MW435345 | na |
| TW246 | *A. indissimilis* | Wheeler 6830 | Montana, USA | **PP965028** | **PP965102** | **PP971370** | **PP952632** | na |
| TW284 | *A. indissimilis* | Wheeler 3870 | Montana, USA | **PP975032** | **PP965077** | **PP971353** | **PP952654** | **PP266224** |
|  | *A. indissimilis* | Nordin 5943 (UPS) | Sweden | EU057909.1 | HM060746.1 | HM060708.1 |  |  |
|  | *A. laevata* | Tibell 23659 (UPS) | Uppland, Sweden | EU057910.1 | HM060730.1 | HM060692.1 | na | na |
| TW291 | *Oxneriaria permutata* | Wheeler 4743 | Alaska, USA | **PP965048** | **PP965108** | **PP971389** | **PP952659** | na |
| TW216 | *O. permutata* | Wheeler 5549 | Montana, USA | **PP965046** | **PP965107** | **PP971387** | **PP952617** | na |
| TW286 | *O. permutata* | Wheeler 4018 | Alaska, USA | **PP965051** | **PP965111** | **PP971392** | **PP952656** | na |
| TW306 | *O. permutata* | Wheeler 4253 | Alaska, USA | **PP965049** | **PP965109** | **PP971390** | **PP952668** | na |
| TW292 | *O. permutata* | Wheeler 4318 | Alaska, USA | **PP965050** | **PP965110** | **PP971391** | **PP952660** | na |
|  | *O. permutata* | Nordin 6027 (UPS) | Sweden | EU057918.1 | HM060747.1 | HM060709.1 | na | na |
| TW296 | *O. permutata* | Wheeler 4463 | Alaska, USA | MW447390 | MW447404 | MW424810 | MW435338 | **PP266250** |
| TW252 | *Oxneriaria* sp*.* | Wheeler 4080 | Alaska, USA | **PP964986** | **PP965057** | **PP971335** | **PP952638** | na |
|  | *O. supertegens* | Owe-Larsson 9002 (UPS) | Troms, Norway | EU057936.1 | HM060742.1 | HM060704.1 | na | na |
|  | *O. supertegens* | Nordin 6023 (UPS) | Sweden | EU057938.1 | HM060751.1 | HM060713.1 | na | na |
|  | *O. kohistanensis* | Zulfiqar 2022b-KOH-36 {LAH) | Pakistan | ON392707.1 | ON392711.1 | na | na | na |
| TW289 | *O. perradiata* | Wheeler 3989 | Alaska, USA | **PP964993** | **PP965063** | **PP971342** | **PP952658** | na |
|  | *O. iqbalii* | Zulfiqar 2022a-MD-11 (LAH) | Pakistan | na | ON392708.1 | ON392709.1 | na | na |
| TW280 | *O. anseris* | Wheeler 5696 | Montana, USA | **PP964996** | **PP965065** | **PP971345** | **PP952650** | na |
| TW259 | *O. rosulata* | Wheeler 5186 | Alaska, USA | **PP964995** | na | **PP971344** | **PP952640** | na |
|  | *O. dendroplaca* | Nordin 6366 (UPS) | Finland | HQ259260.1 | HM060758.1 | HM060720.1 | na | na |
|  | *O. dendroplaca* | Nordin 5952 (UPS) | Sweden | HQ259259.1 | HM060744.1 | HM060706.1 | na | na |
|  | *O. mashiginensis* | Nordin 5790 (UPS) | Sweden | EU057912.1 | HM060732.1 | HM060694.1 | na | na |
| TW305 | *O. rivulicola* | Wheeler 4253 | Alaska, USA | **PP965008** | **PP978594** | **PP971400** | **PP952667** | **PP266247** |
| TW297 | *O. rivulicola* | Wheeler 4456 | Alaska, USA | **PP965044** | **PP965106** | **PP971385** | **PP952663** | na |
|  | *O. rivulicola* | Nordin 5957 (UPS) | Sweden | EU057922.1 | HM060753.1 | HM060715.1 | na | na |
| TW307 | *O. circularis* | Wheeler 4170 | Alaska, USA | **PP964994** | **PP965064** | **PP971343** | **PP952669** | **PP266251** |
| TW294 | *O. circularis* | Wheeler 5060 | Alaska, USA | **PP965045** | **PP978595** | **PP971386** | **PP952662** | na |
|  | *O. verruculosa* | Owe-Larsson 9007 (UPS) | Norway | EU057940.1 | HM060741.1 | HM060703.1 | na | na |
| TW237 | *O. verruculosa* | Wheeler 6492 | Norway | **PP964990** | **PP965061** | **PP971339** | **PP952628** | na |
| TW303 | *O. disserpens* | Wheeler 4414 | Alaska, USA | **PP964992** | na | **PP971341** | **PP952665** | na |
| TW312 | *O. lesleyana* | Wheeler 7325 | Montana, USA | **PP964987** | **PP965058** | **PP971336** | **PP952670** | na |
| TW236 | *O. cingulata* | Wheeler 7165 | Montana, USA | **PP964991** | **PP965062** | **PP971340** | **PP952627** | **PP266249** |
|  | *O.* cf. *nikrapensis* | Ebbestad SVL 2 1 (UPS) | Norway | na | HM060759.1 | HM060721.1 | na | na |
| TW240 | *O.* cf. *virginea* | Wheeler 7153 | Montana, USA | MW447397 | MW447412 | MW424818 | MW435346 | na |
| TW283 | *O.* cf. *virginea* | Wheeler 7272 | Montana, USA | **PP964988** | **PP965059** | **PP971337** | **PP952653** | **PP266248** |
| TW287 | *O. nikrapensis* | Wheeler 5257 | Alaska, USA | **PP965047** | na | **PP971388** | **PP952657** | na |
| TW304 | *O. nikrapensis* | Wheeler 5043 | Alaska, USA | **PP964989** | **PP965060** | **PP971338** | **PP952666** | na |
| TW298 | *O. haeyrenii* | Wheeler 5072 | Alaska, USA | **PP964985** | **PP965078** | **PP971334** | **PP952664** | na |
|  | *O. haeyrenii* | Nordin 5997 (UPS) | Sweden | na | HM060755.1 | HM060717.1 | na | na |
|  | *Sagedia* aff. *mastrucata* | Malíček 14741 (hb unknown) | Czech Republic | OP730575.1 | na | OP730585.1 | na | na |
|  | *S.* aff. *mastrucata* | Malíček 15499 (hb unknown) | Czech Republic | OQ918731.1 | na | OQ920118.1 | na | na |
|  | *S.* aff. *mastrucata* | Palice 23193 (PRA) | Russia | MK778583.1 | na | MK778514.1 | na | na |
|  | *S.* aff. *mastrucata* | Nordin 5481 (UPS) | Sweden | EU057914.1 | HM060737.1 | HM060699.1 | na | na |
|  | *S.* aff. *mastrucata* | Nordin 5708 (UPS) | Troms, Norway | EU057913 | HM060736 | HM060698 | na | na |
|  | *S. nunatakkorum* | Malíček 228 (hb unknown) | Austria | KT630250.1 | na | na | na | na |
|  | *S. simoensis* | Malíček 179 (hb unknown) | Slovakia | KT630249.1 | na | KT630251.1 | na | na |
|  | *S. simoensis* | Owe-Larsson 9000 (UPS) | Troms, Norway | EU057926.1 | HM060739.1 | HM060701.1 | na | na |
| TW218 | *S. simoensis* | Wheeler 6288 | Finnmark, Norway | **PP975033** | **PP965067** | **PP971348** | **PP952619** | **PP266246** |
| TW275 | *S. simoensis* | Nelson s.n. | Hoffellsjökull, Iceland | **PP965016** | **PP965085** | **PP971362** | **PP952647** | na |
|  | *S. zonata* | Owe-Larsson 8942 (UPS) | Troms, Norway | EU057946.1 | HM060738.1 | HM060700.1 | na | na |
| TW221 | *S. mastrucata* | Wheeler 6434 | Finnmark, Norway | **PP965015** | **PP978596** | **PP971395** | na | na |
| TW217 | *S. mastrucata* | Wheeler 6467 | Finnmark, Norway | **PP975034** | **PP965066** | **PP971347** | **PP952618** | **PP266245** |
|  | *Circinaria affinis* | Paukov 1978 (hb unknown) | Russia | Unpublished | Unpublished | Unpublished | na | na |
|  | *C. sphaerothallina* | Sohrabi 9369 (hb. Sohrabi) | Semnan, Iran | JQ797545.1 | JQ797508.1 | JQ797476.1 | na | na |
|  | *C. affinis* | Kulakov 1408b (M) | Astrakhan, Russia | na | JQ797502.1 | JQ797492.1 | na | na |
|  | *C. lacunosa* | Abbas 940003 (H) | Xinjiang, China | JQ797517.1 | JQ797494.1 | JQ797490.1 | na | na |
|  | *C. hispida* | Candan 11 (ANES) | Turkey | HQ406806.1 | HM060760.1 | HM060722.1 | na | na |
|  | *C. esculenta* | Owe-Larsson 9796 (UPS) | Astrakhan, Russia | JQ797511.1 | JQ797493.1 | JQ797485.1 | na | na |
|  | *C. desertorum* | Owe-Larsson 9814 (UPS) | Russia | HQ406802.1 | na | na | na | na |
|  | *C.* sp. (as *A. izcoana*) | AFTOL | na | na | AY853359.1 | AY853311.1 | na | KC020272.1 |
| TW215 | *C. arida* | Wheeler 5819 | Montana, USA | **PP964998** | **PP978597** | **PP971346** | **PP952616** | **PP266255** |
|  | *C. podoliana* | KRAM L-49477 | Khmelnytskyi, Ukraine | OR436500.1 | na | OR436507.1 | OR441080.1 | na |
|  | *C. podoliana* | Kiszka (KRAM L) | Khmelnytskyi, Ukraine | OR436506.1 | na | OR436510.1 | OR441082.1 | na |
| TW225 | *C. contorta* | Wheeler 5765 | Montana, USA | **PP964984** | **PP965056** | **PP971333** | **PP952621** | **PP266253** |
|  | *C. leprosescens* | Nordin 5906 (UPS) | Sweden | EU057911.1 | HM060749.1 | HM060711.1 | na | na |
| TW238 | *C. hoffmannii* | Wheeler 3634 | Montana, USA | **PP964982** | **PP965052** | **PP971331** | **PP952629** | **PP266254** |
| TW335 | *C. calcarea* | Knudsen 11729.3 (UCR) | California, USA | **PP965023** | **PP978598** | **PP971401** | **PP952676** | na |
|  | *C. calcarea* | Nordin 5888 (UPS) | Oland, Sweden | EU057898.1 | HM060743.1 | HM060705.1 | na | na |
|  | *C. caesiocinerea* | Tibell 22612 (UPS) | Uppland, Sweden | EU057897.1 | HM060731.1 | HM060693.1 | na | na |
|  | *C. gibbosa* | Nordin 5878 (UPS) | Uppland, Sweden | EU057908.1 | HM060740.1 | HM060702.1 | na | na |
|  | *Megaspora cretacea* | Gasparyan 600199170 (B) | Armenia | KX253975 | na | na | na | na |
|  | *M. cretacea* | Aptroot 73835 (B) | Armenia | KX253974 | na | na | na | na |
| TS1821 | *M. rimisorediata* | Spribille WP642 | Alberta, Canada | **PP964997** | **PP978600** | na | **PP952614** | **PP266252** |
|  | *M. verrucosa* | Kinalioglu 1679 (B) | Corum, Turkey | na | JQ797497.1 | JQ797482.1 | na | na |
|  | *M. verrucosa* | Zuo NJ2018074  (hb unknown) | Antarctica | OL331496.1 | OL331779.1 | na | na | na |
|  | *M. verrucosa* | Sipman 55434 (B) | East Azerbaijan, Iran | na | JQ797498.1 | JQ797483.1 | na | na |
|  | *Aspiciliella cupreoglauca* | Sipman & Raus 61847 (B) | Greece | KY618843.1 | KY576954.1 | KY576930.1 | na | na |
|  | *A. cupreoglauca* | Sipman & Raus 62345 (B) | Greece | KY618844.1 | KY576955.1 | KY576931.1 | na | na |
|  | *A. portosantana* | Sipman 62854 (B) | Portugal | KY618851.1 | KY576961.1 | KY576938.1 | na | na |
|  | *A. portosantana* | Sipman 63019 **(TYPE-B)** | Portugal | KY618852 | KY576962.1 | KY576939.1 | na | na |
|  | *A. intermutans* | Zakeri 40719 (GLM) | Armenia | KY596012 | KY576948 | KY576924 | na | na |
|  | *A. intermutans* | Zakeri 40503 (GLM) | Armenia | KY596011 | KY576947 | KY576923 | na | na |
|  | *A. intermutans* | Palice 11394 (PRA) | Czech Republic | MH248855.1 | MH255580.1 | MH248888.1 | MH293578.1 | na |
|  | *Atrostelia magnifica* | Davydov 21959 **(ISOTYPE-LE)** | Republic of Tyva, Russia | Unpublished | Unpublished | Unpublished | na | na |
|  | *A. magnifica* | Davydov 21961 **(PARATYPE-hb. Davydov)** | Republic of Tyva, Russia | Unpublished | Unpublished | Unpublished | na | na |
| TW269 | *Lobothallia praeradiosa* | Wheeler 3414 | Montana, USA | MW447389 | MW447403 | MW424809 | MW435337 | na |
| TW268 | *L. melanaspis* | Wheeler 3905 | Montana, USA | **PP965007** | **PP965075** | **PP971352** | **PP952644** | **PP266223** |
|  | *L. melanaspis* | Nordin 6622 (UPS) | Jämtland, Sweden | HQ259272.1 | HM060726.1 | HM060688.1 | na | na |
|  | *L. radiosa* | AFTOL 1860 | na | na | KJ766596.1 | KJ766430.1 | na | KJ766935.1 |
|  | *L. farinosa* | Roux 25286 (UPS) | France | na | HM060761.1 | HM060723.1 | na | na |
| TW327 | *L. peltastictoides* | Knudsen 14420 (UCR) | California, USA | **PP965019** | **PP965087** | **PP971367** | **PP952674** | na |
| TW279 | *L. cheresina* | Wheeler 7216 | Utah, USA | **PP965022** | **PP965090** | **PP971366** | **PP952649** | na |
| TW227 | *L. determinata* | Wheeler 3641 | Montana, USA | **PP965020** | **PP965088** | **PP971365** | **PP952622** | na |
| TW242 | *L. determinata* | Wheeler 6017 | Montana, USA | **PP965021** | **PP965089** | **PP971398** | **PP952631** | na |
| TW342 | *Teuvoa junipericola* | Wheeler 7390 | Utah, USA | **PP965018** | na | **PP971364** | **PP952681** | na |
|  | *T. junipericola* | Leavitt 742 (BRY) | Utah, USA | JX306744.1 | JX306758.1 | na | na | na |
|  | *T. uxoris* | Rico & Pizarro 3622 (H) | Castilla, Spain | JX306743.1 | JX306757.1 | na | na | na |
|  | *T. uxoris* | Rico & Pizarro 765 (BRY) | Castilla, Spain | JX306745.1 | JX306759.1 | na | na | na |
|  | *Antidea brucei* | Vondrák 23387 (PRA) | Krivoklatsko, Czech Republic | OK332932.1 | na | OK465535.1 | na | na |
| TW346 | *A. brucei* | Owe-Larsson 9161 **(ISOTYPE-ASU)** | California, USA | **PP965011** | **PP965082** | **PP971359** | **PP952683** | **PP266222** |
| TW328 | *A. brucei* | Knudsen 15069 (ASU) | California, USA | **PP975035** | **PP978599** | **PP974318** | na | na |
| TW222 | *Aspilidea subadunans* | Wheeler 4628 | Alaska, USA | MW899518.1 | MW907114.1 | MW907108.1 | na | na |
| TW339 | *A. subadunans* | McCarthy 2905 (CANL) | Newfoundland, Canada | MW899514.1 | MW907111.1 | MW907105.1 | MW921483.1 | **PP266221** |
| TW226 | *A. subadunans* | Wheeler 3942 | Alaska, USA | MW899517.1 | MW907113.1 | MW907109.1 | na | na |
| TW323 | *A. subadunans* | Talbot/Schofield 458 (WIS) | Alaska, USA | MW899515.1 | na | MW907107.1 | MW921482.1 | na |
| TW320 | *A. myrinii* | Nordin 7447 (WIS-0079196) | Jämtland, Sweden | MW899516.1 | MW907112.1 | MW907106.1 | MW921484.1 | **PP266220** |
|  | *A. myrinii* | Nordin 6205 (UPS) | Sweden | na | HM060754.1 | HM060716.1 | na | na |
|  | *Ochrolechia upsaliensis* | Lumbsch 19916e (MIN) | USA | na | GU980986.1 | GU980979.1 | GU980995.1 | KC222193.1 |
|  | *O. subpallescens* | Lumbsch 19900a (MIN) | USA | na | GU980985.1 | GU980978.1 | GU980994.1 | na |
|  | *O. yasudae* | AFTOL 882 | na | na | DQ986776.1 | DQ986902.1 | na | DQ992466.1 |
|  | *O*. sp. | Spribille 38907 (GZU) | Alaska, USA | KR017126.1 | KR017190.1 | KR017333.1 | na | KR017512.1 |
|  | *Lepra albescens* (as *Pertusaria albescens*) | Schmitt ESS-20967 | Bohemia, Czech Republic | AF329177.1 | AF329176.1 | AF329175.1 | na | na |