

**Table S1.** Museum registration numbers, localities of specimens from which DNA was extracted and GENBANK accession numbers are provided below. Museum acronyms are: AM for Australian Museum Sydney, QM for Queensland Museum, NMV for Museum Victoria Melbourne, SAMA for South Australian Museum, NTM for Northern Territory Museum and Art Gallery, ANWC for Australian National Wildlife Collection.

| Museum ID               | Species           | Location                                          | GPS                               | ND2 #    | RAG1 #   |
|-------------------------|-------------------|---------------------------------------------------|-----------------------------------|----------|----------|
| QMJ81784                | T. condaminensis  | Mt Tyson, Bonjeen Area, QLD                       | 27 35' S 151 33 E                 | KJ881036 | KJ881150 |
| QMJ81870                | T. condaminensis  | Kunari, Via Bongeen, QLD                          | 27 32' 6" S 151 26' 46" E         | KJ881037 | KJ881151 |
| QMJ82087                | T. condaminensis  | Brookstead, QLD                                   | 27 42' 59" S 151 28' 20" E        | KJ881038 | KJ881153 |
| QMJ82088                | T. condaminensis  | Brookstead, QLD                                   | 27 42' 59" S 151 28' 20" E        | KJ881039 | KJ881154 |
| QMJ81871                | T. condaminensis  | Kunari, Via Bongeen, QLD                          | 27 32' 6" S 151 26' 46" E         | KJ881040 | KJ881152 |
| NMVD74073               | T. pentalineata   | Gulf Development Rd, 50 Km South Of Normanby, QLD | 18.11 S 140.88 E                  | KJ881041 | KJ881143 |
| NMVD74075               | T. pentalineata   | Gulf Development Rd, 50 Km South Of Normanby, QLD | 18.11 S 140.88 E                  | KJ881042 |          |
| NMVD74074               | T. pentalineata   | Gulf Development Rd, 50 Km South Of Normanby, QLD | 18.11 S 140.88 E                  | KJ881043 | KJ881144 |
| QM-A007430              | T. wilsoni        | Studley, QLD                                      | 26 42' 3.528" S 148 28' 19.812" E | KJ881032 | KJ881155 |
| QMJ87307                | T. wilsoni        | Cherax Flats, Hodgson, QLD                        | 26 34' 25" S 148 38' 38" E        | KJ881033 | KJ881157 |
| QM-A007431              | T. wilsoni        | Studley, QLD                                      | 26 42' 3.528" S 148 28' 19.812" E | KJ881034 | KJ881156 |
| QMJ89119                | T. wilsoni        | Mount Abundance Rd, 40 Km E Roma                  | 26 42' 10" S 148 29' 10" E        | KJ881035 | KJ881158 |
| NMVD7701<br>(Lectotype) | T. tetraporophora | Adminga Or Dalhouse, SA                           | 26.12 S 134.85 E                  | KJ881067 |          |
| SAMAR45265              | T. tetraporophora | 20k NW Tilpa, NSW                                 | 31.2 S 144.55 E                   | KJ881021 |          |
| QMJ63876                | T. tetraporophora | Isis Downs, Via Isisford, QLD                     | 24 24' S 144 33' E                | KJ881022 | KJ881147 |
| QMJ83530                | T. tetraporophora | Australia:Whitehill Stn, QLD                      | 21 6' 59" S 142 44' 44" E         | KJ881023 |          |
| QMJ82191                | T. tetraporophora | Diamantina Np, QLD                                | 23 46' 47" S 141 11' 40" E        | KJ881024 |          |
| QMJ74792                | T. tetraporophora | Ernest Henry Mine Site, 20km N Cloncurry, QLD     | 20 26' 17" S 140 42' 45" E        | KJ881025 | KJ881145 |
| QMJ74793                | T. tetraporophora | Ernest Henry Mine Site, 20km N Cloncurry, QLD     | 20 26' 17" S 140 42' 45" E        | KJ881026 | KJ881146 |
| QMJ83852                | T. tetraporophora | Woolston, SE Richmond, QLD                        | 21 6' 59" S 142 44' 44" E         | KJ881027 |          |
| QMJ83854                | T. tetraporophora | Woolston, SE Richmond, QLD                        | 21 6' 59" S 142 44' 44" E         | KJ881028 |          |
| QMJ84185                | T. tetraporophora | Stirling Downs, 30 Km SSW Tambo, QLD              | 25 5' 41" S 146 6' 2" E           | KJ881029 |          |
| QMJ84186                | T. tetraporophora | Stirling Downs, 30 Km SSW Tambo, QLD              | 25 5' 29" S 146 4' 54" E          | KJ881030 | KJ881148 |
| QMJ84187                | T. tetraporophora | Stirling Downs, 30 Km SSW Tambo, QLD              | 25 5' 29" S 146 4' 54" E          | KJ881031 | KJ881149 |

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|------------|-------------------|----------------------------------------------|--------------------------------|----------|----------|
| NMVD72741  | T. tetraporophora | 20km From Hamilton Stn Hmstd, SA             | 26.66 S 135.22 E               | KJ881044 | KJ881122 |
| NMVD72736  | T. tetraporophora | 20km From Hamilton Stn Hmstd, SA             | 26.66 S 135.22 E               | KJ881045 |          |
| NMVD72753  | T. tetraporophora | Near Dalhousie Springs, SA                   | 26.66 S 135.22 E               | KJ881046 | KJ881127 |
| NMVD72744  | T. tetraporophora | 17km From Hamilton Stn Hmstd, SA             | 26 39' 28.6' S 135 12' 13.3' E | KJ881047 |          |
| NMVD72752  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881048 |          |
| NMVD72755  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881049 |          |
| NMVD72756  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881050 |          |
| NMVD72757  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881051 |          |
| NMVD72758  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881052 |          |
| NMVD72760  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881053 |          |
| NMVD72761  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881054 |          |
| NMVD72762  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881055 |          |
| NMVD72763  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881056 |          |
| NMVD72764  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881057 |          |
| NMVD72765  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881058 |          |
| NMVD72766  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881059 |          |
| NMVD72770  | T. tetraporophora | Mt Dare Stn, NT                              | 25.98 S 135.10 E               | KJ881060 | KJ881123 |
| NMVD72754  | T. tetraporophora | Australia:Mt Dare Stn, NT                    | 25.98 S 135.10 E               | KJ881061 |          |
| SAMAR46999 | T. tetraporophora | 5k S Mosquito Camp Dam, SA                   | 26.10 S 134.48 E               | KJ881062 | KJ881124 |
| NMVD72759  | T. tetraporophora | Mt. Dare, NT                                 | 25.98 S 135.09 E               | KJ881063 |          |
| NMVD72768  | T. tetraporophora | Near Dalhousie Springs, SA                   | 25.98 S 135.10 E               | KJ881064 |          |
| SAMAR38091 | T. tetraporophora | 5kms SE Mt. Crispe, SA                       | 26.40 S 135.38 E               | KJ881065 | KJ881128 |
| ANWCR6135  | T. tetraporophora | 54km East Muga Park Station, Mulga Pk Rd, NT | 25.98 S 131.58 E               | KJ881066 |          |
| SAMAR48423 | T. tetraporophora | Allandale Stn, SA                            | 27.62 S 135.58 E               | KJ881068 |          |
| SAMAR44722 | T. tetraporophora | Todmorden Stn, SA                            | 27.13 S 134.75 E               | KJ881069 |          |
| SAMAR26543 | T. tetraporophora | Granite Downs H/S, SA                        | 26.93 S 133.48 E               | KJ881070 |          |
| SAMAR48505 | T. tetraporophora | Nilpinna Stn, SA                             | 28.20 S 135.68 E               | KJ881071 |          |
| SAMAR47309 | T. tetraporophora | Peake Stn, SA                                | 28.23 S 135.90 E               | KJ881072 | KJ881125 |
| SAMAR46481 | T. tetraporophora | 13.6k S Mungutana Dam, SA                    | 29.33 S 135.68 E               | KJ881073 |          |

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|------------|-------------------|--------------------------------------------------|------------------|----------|----------|
| SAMAR26805 | T. tetraporophora | 25km S Mabel Ck H/S, SA                          | 28.94 S 134.32 E | KJ881074 |          |
| SAMAR48380 | T. tetraporophora | Mount Barry Stn, SA                              | 28.23 S 134.98 E | KJ881075 | KJ881126 |
| SAMAR46538 | T. tetraporophora | 5km W Mt Margaret, SA                            | 28.48 S 136.07 E | KJ881076 |          |
| SAMAR20871 | T. tetraporophora | 48k S Olympic Dam, SA                            | 30.45 S 136.90 E | KJ881077 | KJ881129 |
| NMVD71386  | T. tetraporophora | Trk To Corona Stn, NTH Of Broken Hill, NSW       | 31.44 S 141.49 E | KJ881078 | KJ881130 |
| NMVD71387  | T. tetraporophora | Trk To Corona Stn, NTH Of Broken Hill, NSW       | 31.44 S 141.48 E | KJ881079 |          |
| NMVD71388  | T. tetraporophora | Trk To Corona Stn, NTH Of Broken Hill, NSW       | 31.68 S 141.57 E | KJ881080 |          |
| NMVD71389  | T. tetraporophora | Trk To Corona Stn, NTH Of Broken Hill, NSW       | 31.68 S 141.57 E | KJ881081 |          |
| NMVD71390  | T. tetraporophora | Trk To Corona Stn, NTH Of Broken Hill, NSW       | 31.68 S 141.57 E | KJ881082 | KJ881131 |
| SAMAR41301 | T. tetraporophora | Alderman's Catch, SA                             | 32.53 S 140.62 E | KJ881083 | KJ881132 |
| SAMAR41504 | T. tetraporophora | Manunda Ck, SA                                   | 32.77 S 139.65 E | KJ881084 | KJ881133 |
| SAMAR53153 | T. tetraporophora | 5k Nf Callory Bore, SA                           | 31.80 S 138.75 E | KJ881085 |          |
| SAMAR51945 | T. tetraporophora | 1.5 Km Wsw Of Reedy Hole Springs, SA             | 30.25 S 138.83 E | KJ881086 |          |
| SAMAR46371 | T. tetraporophora | 2.5k W Wangianna Rail Siding, SA                 | 29.65 S 137.70 E | KJ881087 | KJ881134 |
| AMR151151  | T. tetraporophora | Sturt National Park, NSW                         | 29.48 S 142.23 E | KJ881088 |          |
| AMR151146  | T. tetraporophora | Sturt National Park, Binerah Downs, NSW          | 29.02 S 141.55 E | KJ881089 |          |
| AMR151144  | T. tetraporophora | Sturt National Park, Binerah Downs, NSW          | 29.02 S 141.55 E | KJ881090 | KJ881135 |
| AMR153258  | T. tetraporophora | Milparinka, NSW                                  | 29.72 S 141.87 E | KJ881091 |          |
| AMR151128  | T. tetraporophora | Sturt National Park, 12 Mile Creek Crossing, NSW | 29.20 S 141.97 E | KJ881092 |          |
| AMR151141  | T. tetraporophora | Sturt National Park, NSW                         | 29.05 S 141.85 E | KJ881093 |          |
| AMR152948  | T. tetraporophora | Sturt National Park, NSW                         | 29.05 S 141.85 E | KJ881094 |          |
| AMR151676  | T. tetraporophora | White Cliffs, 34.7km From Silver City Hwy, NSW   | 30.83 S 143.08 E | KJ881095 |          |
| QMJ48542   | T. tetraporophora | 100km S Jackson, QLD                             | 26.63 S 149.63 E | KJ881096 |          |
| SAMAR31167 | T. tetraporophora | Innamincka Ruins, SA                             | 27.73 S 140.73 E | KJ881097 | KJ881136 |
| SAMAR32468 | T. tetraporophora | Innamincka, SA                                   | 27.73 S 140.73 E | KJ881098 |          |
| SAMAR46041 | T. tetraporophora | Approx 30k SE Moomba Gas Field, SA               | 28.15 S 140.17 E | KJ881099 |          |
| SAMAR42934 | T. tetraporophora | Eromanga Dump, QLD                               | 26.33 S 142.87 E | KJ881100 | KJ881137 |
| AMR143897  | T. tetraporophora | 22.3km N Of Barkly Hwy Via Normonton Road, QLD   | 20.58 S 140.43 E | KJ881101 |          |
| AMR143850  | T. tetraporophora | 28km E Ilfracombe On Landsborough Hwy, QLD       | 23.60 S 144.58 E | KJ881102 |          |

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|------------|-------------------|--------------------------------------------------|------------------|----------|----------|
| AMR143863  | T. tetraporophora | 0.7km Ne Winton, QLD                             | 22.37 S 143.03 E | KJ881103 |          |
| SAMAR42734 | T. tetraporophora | SE Of Muttaborra, QLD                            | 22.58 S 144.52 E | KJ881104 | KJ881142 |
| SAMAR42806 | T. tetraporophora | 10 Km NW Of Diamantina Stn, QLD                  | 23.77 S 141.13 E | KJ881105 |          |
| QMJ81203   | T. tetraporophora | Myuna Stn Via Collinsville, QLD                  | 21.07 S 143.22 E | KJ881106 |          |
| NMVD74051  | T. tetraporophora | Road To Gregory Downs, 3km S Of                  | 17.89 S 138.34 E | KJ881107 |          |
| NMVD74046  | T. tetraporophora | 8km S Of Carpentaria Highway, QLD                | 17.94 S 139.30 E | KJ881108 | KJ881141 |
| NMVD74049  | T. tetraporophora | 16km S Of Carpentaria Highway, QLD               | 17.87 S 139.34 E | KJ881109 |          |
| NMVD74048  | T. tetraporophora | 16km S Of Carpentaria Highway, QLD               | 17.87 S 139.34 E | KJ881110 |          |
| AMR147233  | T. tetraporophora | 52 Km N Barkly Roadhouse On Cape Crawford Rd, NT | 19.70 S 135.82 E | KJ881111 |          |
| AMR147225  | T. tetraporophora | 104.8 Km W Camooweal (= 3.6 Km E Soudan), QLD    | 19.62 S 138.52 E | KJ881112 | KJ881138 |
| AMR147226  | T. tetraporophora | 104.8 Km W Camooweal (= 3.6 Km E Soudan), QLD    | 19.62 S 138.52 E | KJ881113 |          |
| AMR147236  | T. tetraporophora | 6 Km Along Old Barkly Stock Route, NT            | 17.98 S 135.18 E | KJ881114 | KJ881139 |
| NMVD72694  | T. tetraporophora | Brunette Downs Hmstd Rd, Tablelands Hwy, NT      | 18.64 S 135.96 E | KJ881115 | KJ881140 |
| NMVD72739  | T. tetraporophora | Brunette Downs Hmstd Rd, Tablelands Hwy, NT      | 18.64 S 135.96 E | KJ881116 |          |
| NTMR24487  | T. tetraporophora | Nr Lake Corella Barkly Tableland, NT             | 18.72 S 135.59 E | KJ881117 |          |
| SAMAR54456 | T. tetraporophora | Toorak Hs, QLD                                   | 21.03 S 141.78 E | KJ881118 |          |
| SAMAR55728 | T. tetraporophora | 7.5k E Julia Ck On Flinders Highway, QLD         | 20.65 S 141.81 E | KJ881119 |          |
| SAMAR54036 | T. tetraporophora | Playford River Crossing, On Tablelands H/Way, NT | 19.29 S 136.06 E | KJ881120 |          |
| SAMAR54453 | T. tetraporophora | 15k S Julia Creek, QLD                           | 20.82 S 141.74 E | KJ881121 |          |

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