# Citation: Amor, M.D., M.D. Norman, H.E. Cameron and J.M. Strugnell. Allopatric speciation within a cryptic species complex of Australasian octopuses.

# Supplementary data

Table S1: Specimen information for individuals of which molecular sequencing was undertaken during the present study.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **Species** | **Location** | **Region** | ***12S***  | ***16S***  | ***COI*** | ***COIII*** | ***Cytb*** |
| NQ001 | *O.tetricus* | NSW | Wallaga Lake | \* | \* | \* | \* |  |
| NQ002 | *O.tetricus* | NSW | Wallaga Lake | \* |  | \* | \* | \* |
| NQ003 | *O.tetricus* | NSW | Wallaga Lake |  | \* | \* | \* | \* |
| NQ010 | *O.tetricus* | NSW | Wallaga Lake | \* |  | \* | \* | \* |
| NQ011 | *O.tetricus* | NSW | Wallaga Lake |  | \* | \* | \* | \* |
| NQ015 | *O.tetricus* | NSW | Narooma | \* | \* | \* | \* |  |
| NQ028 | *O.tetricus* | NSW | Shoal Bay, Port Stephens |  |  | \* | \* | \* |
| NQ029 | *O.tetricus* | NSW | Shoal Bay, Port Stephens | \* | \* | \* | \* |  |
| TAS4113 | *O.tetricus* | Tasmania | Flinders Island |  |  | \* | \* |  |
| TAS4123 | *O.tetricus* | Tasmania | Flinders Island | \* |  | \* | \* |  |
| TAS4124 | *O.tetricus* | Tasmania | Flinders Island |  |  | \* | \* |  |
| TAS4126 | *O.tetricus* | Tasmania | Flinders Island |  |  | \* | \* |  |
| TAS4132 | *O.tetricus* | Tasmania | Flinders Island |  |  |  | \* |  |
| LML1 | *O. gibbsi* | NZ | Leigh Marine Lab | \* | \* | \* | \* | \* |
| LML4 | *O. gibbsi* | NZ | Leigh Marine Lab | \* | \* | \* | \* | \* |
| LML8 | *O. gibbsi* | NZ | Leigh Marine Lab | \* | \* | \* | \* | \* |
| NZ1 | *O. gibbsi* | NZ | Leigh Marine Lab | \* | \* | \* | \* | \* |
| ct123 | *O.*cf. *tetricus* | WA | Woodmans Point | \* | \* | \* | \* | \* |
| ct133 | *O.*cf. *tetricus* | WA | Town Jetty, Albany | \* | \* | \* | \* | \* |
| SWA006 | *O.*cf. *tetricus* | WA | Lucky Bay, Cape Le Grand |  |  | \* | \* | \* |
| SWA007 | *O.*cf. *tetricus* | WA | Lucky Bay, Cape Le Grand |  | \* | \* | \* | \* |
| SWA008 | *O.*cf. *tetricus* | WA | Lucky Bay, Cape Le Grand |  |  | \* | \* | \* |
| SWA009 | *O.*cf. *tetricus* | WA | Esperance |  | \* | \* | \* | \* |
| SWA010 | *O.*cf. *tetricus* | WA | Esperance |  | \* | \* | \* | \* |
| WAM6701 | *O.*cf. *tetricus* | WA | Mandurah |  |  | \* | \* |  |
| WAM6702 | *O.*cf. *tetricus* | WA | Mandurah |  |  | \* | \* |  |
| WAM6703 | *O.*cf. *tetricus* | WA | Mandurah |  |  | \* | \* |  |
| WAM6704 | *O.*cf. *tetricus* | WA | Mandurah |  | \* | \* | \* | \* |
| WAM6705 | *O.*cf. *tetricus* | WA | Mandurah |  |  | \* |  |  |
| WAM6706 | *O.*cf. *tetricus* | WA | Mandurah |  | \* | \* | \* | \* |
| WAM6707 | *O.*cf. *tetricus* | WA | Mandurah |  | \* | \* | \* | \* |
| WAM6708 | *O.*cf. *tetricus* | WA | Mandurah |  |  | \* | \* |  |
| WAM6709 | *O.*cf. *tetricus* | WA | Mandurah |  |  | \* | \* |  |
| WAM6710 | *O.*cf. *tetricus* | WA | Mandurah |  | \* | \* | \* | \* |
| SAVULG01 | *O.vulgaris* | South Africa | Port Elizabeth |  |  | \* |  |  |
| OVAL1 | *O.vulgaris* | Spain | Perpignan |  |  | \* | \* | \* |
| OVAL2 | *O.vulgaris* | Spain | Perpignan |  |  | \* | \* | \* |
| OVAL3 | *O.vulgaris* | Spain | Perpignan |  |  | \* | \* | \* |
| OVAL4 | *O.vulgaris* | Spain | Perpignan |  |  | \* | \* | \* |
| OVAL5 | *O.vulgaris* | Spain | Perpignan |   |   | \* | \* | \* |

*Locations –* NSW = New South Wales, NZ = New Zealand, WA = Western Australia

Table S2: Specimen information for individuals accessed via GenBank for use in the present study.

|  |  |  |  |
| --- | --- | --- | --- |
| **Accession #** | **Species** | **Location** | **Gene(s)** |
| AJ390318 | *O. mimus* | Chile | *16S* |
| AJ012128 | *O. mimus* | Chile | *COIII* |
| AJ250480 | *O. mimus* | Costa Rica | *16S* |
| AJ390319 | *O. mimus* | Costa Rica | *COIII* |
| HQ846021 | *O. vulgaris* | China | *16S* |
| HQ846110 | *O. vulgaris* | China | *COI* |
| HQ846061 | *O. vulgaris* | China | *16S* |
| HQ846154 | *O. vulgaris* | China | *COI* |
| NC006353 | *O. vulgaris* | Japan | *12S, 16S, COI, COIII, Cytb* |
| AB430546 | *O. vulgaris* | Japan | *COI* |
| AB573217 | *O. vulgaris* | Japan | *COIII* |
| AB430547 | *O. vulgaris* | Japan | *COI* |
| AB573219 | *O. vulgaris* | Japan | *COIII* |
| AB430548 | *O. vulgaris* | Japan | *COI* |
| AB573218 | *O. vulgaris* | Japan | *COIII* |
| FN424379 | *O. vulgaris* | St Paul and Amsterdam Islands | *COI* |
| FN424382 | *O. vulgaris* | St Paul and Amsterdam Islands | *COIII* |
| FN424380 | *O. vulgaris* | St Paul and Amsterdam Islands | *COI* |
| FN424383 | *O. vulgaris* | St Paul and Amsterdam Islands | *COIII* |
| FN424381 | *O. vulgaris* | St Paul and Amsterdam Islands | *COI* |
| FN424384 | *O. vulgaris* | St Paul and Amsterdam Islands | *COIII* |
| AJ628241 | *O. vulgaris* | South Africa | *COIII* |
| AJ628204 | *O. vulgaris* | South Africa | *Cytb* |
| DQ683234 | *O. vulgaris* | South Africa, Durban | *16S* |
| DQ683214 | *O. vulgaris* | South Africa, Durban | *COI* |
| DQ683235 | *O. vulgaris* | South Africa, Durban | *16S* |
| DQ683215 | *O. vulgaris* | South Africa, Durban | *COI* |
| DQ683236 | *O. vulgaris* | South Africa, Durban | *16S* |
| DQ683216 | *O. vulgaris* | South Africa, Durban | *COI* |
| DQ683237 | *O. vulgaris* | South Africa, Durban | *16S* |
| DQ683217 | *O. vulgaris* | South Africa, Durban | *COI* |
| DQ683238 | *O. vulgaris* | South Africa, Durban | *16S* |
| DQ683218 | *O. vulgaris* | South Africa, Durban | *COI* |
| DQ683239 | *O. vulgaris* | South Africa, Durban | *16S* |
| DQ683219 | *O. vulgaris* | South Africa, Durban | *COI* |
| DQ683247 | *O. vulgaris* | Spain, Galicia | *16S* |
| DQ683221 | *O. vulgaris* | Spain, Galicia | *COI* |
| DQ683230 | *O. vulgaris* | South Africa, Hout Bay | *16S* |
| DQ683208 | *O. vulgaris* | South Africa, Hout Bay | *COI* |
| DQ683228 | *O. vulgaris* | South Africa, Port Elizabeth | *16S* |
| DQ683212 | *O. vulgaris* | South Africa, Port Elizabeth | *COI* |
| DQ683232 | *O. vulgaris* | South Africa, Struisbaai | *16S* |
| DQ683210 | *O. vulgaris* | South Africa, Struisbaai | *COI* |
| DQ683244 | *O. vulgaris* | Africa, Senegal | *16S* |
| DQ683224 | *O. vulgaris* | Africa, Senegal | *COI* |
| DQ683241 | *O. vulgaris* | Tristan da Chuna | *16S* |
| DQ683205 | *O. vulgaris* | Tristan da Chuna | *COI* |
| DQ683240 | *O. vulgaris* | South Africa, Umhlanga | *16S* |
| DQ683220 | *O. vulgaris* | South Africa, Umhlanga | *COI* |

Table S3: Specimen information for individuals of which morphological traits were recorded during the present study.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Catalogue #** | **Institution** | **Species** | **Coast** | **Location** | **Latitude, longitude** |
| C126244 | AM | *O. tetricus* | East | Nelson Head, Port Stephens, NSW | -32.716667, 152.166667 |
| C156208 | AM | *O. tetricus* | East | Shelly Beach, North Manly, NSW | -33.800000, 151.300000 |
| C171669 | AM | *O. tetricus* | East | Parsley Bay, NSW | -35.866667, 151.283333 |
| C171685 | AM | *O. tetricus* | East | Woody Head, Iluka, NSW | -29.358015, 153.354721 |
| F78082 | AM | *O. tetricus* | East | Merewether, NSW | -32.98333, 151.7833300 |
| F78281a | AM | *O. tetricus* | East | Newcastle, NSW | -32.916667, 151.950000 |
| F78283b | AM | *O. tetricus* | East | Newcastle, NSW | -32.866667, 152.016667 |
| F160334 | MV | *O. tetricus* | East | Wallaga Lake, NSW | -36.350000, 150.050000 |
| F182057 | MV | *O. tetricus* | East | Narooma Inlet, NSW | -36.218238, 150.132300 |
| F182058 | MV | *O. tetricus* | East | Narooma Inlet, NSW | -36.218238, 150.132300 |
| F200317 | MV | *O. tetricus* | East | Wreck Bay, NSW | -34.200000, 150.716667 |
| F200318a | MV | *O. tetricus* | East | Wreck Bay, NSW | -35.216667, 150.716667 |
| F200318b | MV | *O. tetricus* | East | Wreck Bay, NSW | -35.216667, 150.716667 |
| F200318c | MV | *O. tetricus* | East | Wreck Bay, NSW | -35.216667, 150.716667 |
| F200319 | MV | *O. tetricus* | East | Long Reef, Sydney, NSW | -33.733333, 151.316667 |
| F200319 | MV | *O. tetricus* | East | Long Reef, Sydney, NSW | -33.733333, 151.316667 |
| F200320 | MV | *O. tetricus* | East | Merimbula Harbour, NSW | -36.883333, 149.916667 |
| F200321 | MV | *O. tetricus* | East | Shelly Beach, North Manly, NSW | -33.800000, 151.300000 |
| F200323 | MV | *O. tetricus* | East | Shelly Beach, North Manly, NSW | -33.800000, 151.300000 |
| F200324 | MV | *O. tetricus* | East | Long Reef, Sydney, NSW | -33.733333, 151.316667 |
| F77273 | MV | *O. tetricus* | East | Newcastle, NSW | -32.966667, 151.783333 |
| F77274 | MV | *O. tetricus* | East | Tathra, NSW | -36.616667, 150.066667 |
| F78281(B) | MV | *O. tetricus* | East | Newcastle, NSW | -32.933333, 151.950000 |
| F78283c | MV | *O. tetricus* | East | Newcastle, NSW | -32.866667, 152.016667 |
| F80438 | MV | *O. tetricus* | East | Amity Point, North Stradbroke Island, QLD | -27.398309, 153.442056 |
| F80439 | MV | *O. tetricus* | East | Ned’s Beach, Lord Howe Island, NSW | -31.524986, 159.060767 |
| F80440 | MV | *O. tetricus* | East | North Stradbroke Island, QLD | -27.668056, 153.484722 |
| F80442a | MV | *O. tetricus* | East | Sydney, NSW | -33.867487, 151.206990 |
| F80442b | MV | *O. tetricus* | East | Sydney, NSW | -33.867487, 151.206990 |
| F80445 | MV | *O. tetricus* | East | Potters Point, Karnell, NSW | -34.045000, 151.211667 |
| F80446 | MV | *O. tetricus* | East | Potters Point, Karnell, NSW | -34.040000, 151.211667 |
| F85370a | MV | *O. tetricus* | East | Wreck Bay, NSW | -35.200000, 150.733333 |
| F180696 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470439 |
| F180697 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470437 |
| F180698 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470440 |
| F180699 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470433 |
| F180700 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470435 |
| F180701 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470441 |
| F180702 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470444 |
| F180704 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470438 |
| F180705 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470443 |
| F180706 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470436 |
| F180707 | MV | *O. tetricus* | TAS | Flinders Island, TAS | -39.772767, 148.470442 |
| 310 6-83-1 | AM | *O.* cf. *tetricus* | West | Fathom Bank, off Garden Island, WA | -32.242955, 115.698630 |
| F160302 | MV | *O.* cf. *tetricus* | West | Busselton Jetty, WA | -33.650000, 155.333333 |
| F160306 | MV | *O.* cf. *tetricus* | West | Esperance boat wharf, WA | -33.000000, 121.000000 |
| F160320 | MV | *O.* cf. *tetricus* | West | Esperance tanker jetty, WA | -33.868611, 121.903889 |
| F160321 | MV | *O.* cf. *tetricus* | West | Esperance tanker jetty, WA | -33.868611, 121.903889 |
| F160325 | MV | *O.* cf. *tetricus* | West | Princess royal harbour, Albany, WA | -35.075000, 117.925000 |
| F200326a | MV | *O.* cf. *tetricus* | West | Busselton jetty, WA | -33.650000, 155.333333 |
| F200327 | MV | *O.* cf. *tetricus* | West | Lucky bay, Cape Le Grand National Park, WA | -33.970413, 122.269592 |
| F200327 | MV | *O.* cf. *tetricus* | West | Lucky bay, Cape Le Grand National Park, WA | -33.970413, 122.269592 |
| F200328 | MV | *O.* cf. *tetricus* | West | Peaceful bay, 30 km East of Walpole WA | -35.041944, 116.930752 |
| F200329 | MV | *O.* cf. *tetricus* | West | Rockingham Grain Jetty, WA | -32.255945, 115.751492 |
| F200330 | MV | *O.* cf. *tetricus* | West | Rockingham Grain Jetty, WA | -32.255945, 115.751492 |
| F200331 | MV | *O.* cf. *tetricus* | West | Esperance tanker jetty, WA | -33.868611, 121.903889 |
| F200334 | MV | *O.* cf. *tetricus* | West | Town jetty, Albany, WA | -35.030625, 117.886519 |
| F80447 | MV | *O.* cf. *tetricus* | West | Woodmans Point, Perth, WA | -32.125398, 115.758562 |
|  |  |  |  |  |  |

*Institutions – AM = Australian Museum, Sydney, MV = Museum Victoria*

*Locations –* NSW = New South Wales, QLD = Queensland TAS = Tasmania, WA = Western Australia

Table S4: Canonical correlation (CC) output for male octopod multivariate analysis.

|  |  |
| --- | --- |
| **CC** | **Value** |
| 1 | 0.943 |
| 2 | 0.774 |
| 3 | 0.762 |

Table S5: Canonical loadings (CL) output for male octopod multivariate analysis.

|  |  |  |  |
| --- | --- | --- | --- |
| **Trait** | **CL1** | **CL2** | **CL3** |
| MW | 0.073 | 0.07 | -0.07 |
| HW | 0.196 | 0.259 | -0.131 |
| AW | 0.14 | 0.238 | -0.371 |
| SDn | 0.05 | 0.121 | -0.304 |
| WD | 0.181 | 0.353 | -0.152 |
| ALL3 | 0.058 | -0.217 | 0.425 |
| ALR3 | 0.468 | -0.274 | -0.16 |
| LSDL2 | -0.055 | -0.014 | -0.236 |
| LSDL3 | -0.119 | -0.097 | -0.305 |
| LSDR2 | -0.158 | 0.025 | -0.302 |
| LSDR3 | -0.139 | -0.014 | -0.382 |
| SCL3 | 0.256 | -0.103 | 0.312 |
| SCR3 | 0.686 | -0.033 | 0.435 |
| LL | 0.068 | -0.287 | -0.252 |
| CL | -0.017 | -0.233 | -0.09 |
| TOL | 0.096 | -0.165 | 0.017 |

Table S6: Principal components (PC) calculated from canonical correlation and canonical loading outputs from male octopod multivariate analysis.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Catalogue number** | **Location** | **PC1** | **PC2** | **PC3** |
| C126244 | East Australia | 1.398564154 | -0.063633217 | -1.82498345 |
| C171685 | East Australia | 1.656582137 | -0.099131475 | -1.168465778 |
| F160334 | East Australia | 1.574527919 | 0.363012939 | -1.085086723 |
| F77273 | East Australia | 1.685109747 | -0.300965674 | -0.96476396 |
| F77274 | East Australia | 1.568450827 | -0.501585849 | -1.131766839 |
| F78281(B) | East Australia | 1.351409537 | 0.050502997 | -1.693015773 |
| F80438 | East Australia | 1.710610872 | -0.313058649 | -1.481486248 |
| F80439 | East Australia | 1.622998216 | -0.385155637 | -0.850786645 |
| F80440 | East Australia | 1.818444188 | -0.611405995 | -1.468833801 |
| F80445 | East Australia | 1.467906926 | -0.369658284 | -1.688319729 |
| F200319 | East Australia | 1.790746655 | -0.313842653 | -1.63515882 |
| F200324 | East Australia | 1.592004277 | -0.221444375 | -1.720480192 |
| F200323 | East Australia | 1.522560376 | -0.168410585 | -1.272437234 |
| F200321 | East Australia | 1.362814495 | -0.009377961 | -1.689063827 |
| F182058 | East Australia | 1.912142313 | -0.183517245 | -2.880150654 |
| F182057 | East Australia | 1.916011784 | -0.192024188 | -2.626587877 |
| F200317 | East Australia | 1.670192661 | -0.389328693 | -3.064599549 |
| F200318b | East Australia | 1.679143563 | -0.506436436 | -1.140385436 |
| F180706 | Tasmania | 1.710481088 | -0.548840695 | -1.922252402 |
| F180698 | Tasmania | 1.573629475 | -0.601183599 | -1.217745373 |
| F180707 | Tasmania | 1.893463296 | -0.91658773 | -2.227068944 |
| F180699 | Tasmania | 1.547096979 | -0.47192172 | -1.45772354 |
| F180700 | Tasmania | 1.661304028 | -0.506232288 | -1.473664311 |
| F180697 | Tasmania | 1.656125045 | -0.68637114 | -1.317081058 |
| F180696 | Tasmania | 1.396853251 | -0.53629949 | -1.298398701 |
| F180702 | Tasmania | 1.476770081 | -0.546380117 | -1.386584132 |
| NMNZM.118421 | New Zealand | 2.025951471 | -0.327920877 | -1.827612087 |
| NMNZM.118305 | New Zealand | 1.830826997 | -0.206752673 | -1.595982188 |
| NMNZM.118425 | New Zealand | 1.505001738 | -0.350295695 | -1.179311946 |
| 310 6-83-1 | Western Australia | 2.472296823 | -0.611333741 | -1.313158431 |
| F200330 | Western Australia | 2.385776448 | -0.391990469 | -1.225903028 |
| F160306 | Western Australia | 2.238991724 | -0.444423706 | -1.501335696 |
| F200327 | Western Australia | 2.244534044 | -0.520498612 | -1.278073611 |
| F200329 | Western Australia | 2.164884583 | -0.479896537 | -1.694166644 |
| F200328 | Western Australia | 2.795060035 | -0.557242263 | -1.37264284 |
| F200326a | Western Australia | 2.39664783 | -0.466762457 | -1.718671345 |

Table S7: Eigenvalues and principal component (PC) variance contribution outputs from male octopod multivariate analysis.

|  |  |  |
| --- | --- | --- |
|  | **Eigenvalue** | **PC variance contribution (%)** |
| 1 | 8.029263844 | 73.6 |
| 2 | 1.49423831 | 13.7 |
| 3 | 1.384608781 | 12.7 |
| Total | 10.90811093 | 100 |

Table S8: Ranked canonical loadings (CL) from male octopod multivariate analysis; based upon contribution to principal components (PC).

|  |  |  |
| --- | --- | --- |
| **Trait** | **PC contribution** | **Rank** |
| SCR3 | 50.95 | 1 |
| ALR3 | 38.20 | 2 |
| SCL3 | 20.25 | 3 |
| WD | 18.16 | 4 |
| HW | 17.98 | 5 |
| AW | 13.57 | 6 |
| SDeR2 | 11.97 | 7 |
| SDeR3 | 10.42 | 8 |
| SDeL3 | 10.09 | 9 |
| TOL | 9.33 | 10 |
| LL | 8.94 | 11 |
| ALL3 | 7.24 | 12 |
| MW | 6.33 | 13 |
| SDn | 5.34 | 14 |
| CL | 4.44 | 15 |
| SDeL2 | 4.24 | 16 |

Table S9: Canonical correlation (CC) output for female octopod multivariate analysis.

|  |  |
| --- | --- |
| **CC** | **Value** |
| 1 | 0.817 |
| 2 | 0.674 |

Table S10: Canonical loadings (CL) output for female octopod multivariate analysis.

|  |  |  |
| --- | --- | --- |
| **Trait** | **CL1** | **CL2** |
| MW | 0.098 | 0.067 |
| HW | 0.553 | 0.086 |
| AW | 0.176 | -0.006 |
| SDn | 0.177 | 0.158 |
| WD | 0.297 | -0.33 |
| ALL3 | 0.31 | 0.225 |
| ALR3 | 0.018 | -0.071 |
| SCL3 | 0.493 | 0.037 |
| SCR3 | 0.118 | -0.315 |

Table S11: Principal components (PC) calculated from canonical correlation and canonical loading outputs from female octopod multivariate analysis.

|  |  |  |  |
| --- | --- | --- | --- |
| **Catalogue number** | **Location** | **PC1** | **PC2** |
| C156208 | East Australia | 2.033727 | -0.17161 |
| C171669 | East Australia | 2.105987 | -0.15068 |
| F78082 | East Australia | 2.068866 | -0.24301 |
| F78281a | East Australia | 2.233548 | -0.12304 |
| F78283b | East Australia | 1.930682 | -0.27489 |
| F80442a | East Australia | 2.057868 | -0.14028 |
| F80442b | East Australia | 2.301519 | -0.14622 |
| F80446 | East Australia | 1.697702 | -0.12759 |
| F85370a | East Australia | 2.169133 | -0.19117 |
| F200320 | East Australia | 2.247057 | -0.17498 |
| F200319 | East Australia | 2.738278 | -0.17541 |
| F200318a | East Australia | 2.211669 | -0.14806 |
| F200318c | East Australia | 1.685601 | -0.10294 |
| F78283c | East Australia | 2.07602 | -0.26773 |
| F180704 | Tasmania | 2.186593 | -0.12979 |
| F180701 | Tasmania | 2.216311 | -0.01233 |
| F180705 | Tasmania | 2.93645 | 0.054955 |
| F200334 | Western Australia | 2.967886 | -0.16133 |
| F160320 | Western Australia | 2.371038 | -0.08675 |
| F160321 | Western Australia | 2.548854 | -0.23915 |
| F160325 | Western Australia | 2.2995 | -0.21815 |
| F80447 | Western Australia | 2.241005 | -0.05659 |
| F200327 | Western Australia | 2.365949 | -0.21258 |
| F200331 | Western Australia | 2.799516 | -0.14644 |
| F160302 | Western Australia | 2.37516 | -0.14816 |

Table S12: Eigenvalues and principal component (PC) variance contribution outputs from female octopod multivariate analysis.

|  |  |  |
| --- | --- | --- |
|  | **Eigenvalue** | **PC variance contribution (%)** |
| 1 | 2.007419303 | 70.7 |
| 2 | 0.832428114 | 29.3 |
| Total | 2.839847417 | 100 |

Table S13: Timing of divergence estimates (Tamura-Nei genetic distance) for *Octopus tetricus* (East Australia and New Zealand) and *O.* cf. *tetricus* (Western Australia).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Octopus tetricus* | *Octopus* cf. *tetricus* | Divergence (million years) | - | + |
| *Octopus tetricus* | 0.0021 | 0.0336 | 4.4 | 3.2 | 6.9 |
| *Octopus* cf. *tetricus* | 0.0336 | 0.0018 |  |  |  |

Table S14: Timing of divergence estimates (Tamura-Nei genetic distance) for the Australasian tetricus complex and Japanese/Chinese representatives of the *Octopus vulgaris* group.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Japan/China | Australasia | Divergence (million years) | - | + |
| Japan/China | 0.0016 | 0.0570 | 7.4 | 5.4 | 11.6 |
| Australasia | 0.0570 | 0.0019 |  |  |  |