**Table S1.** List of all the species, voucher numbers and Genbank accession numbers of the sequences employed in this study

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Species | Vouchers | COI | 12S | cytb | ND4 | Cmos | NTF3 | PLRL | PNN | Phy38 | Phy41 | Phy60 | Phy64 | Phy84 | Phy87 | Phy89 |
| *L. archeforus* | LJAMM–CNP 9240 |  | KF969004 | KF968826 |  | KF968633 |  | JF272897 | KF967760 |  |  |  |  |  |  |  |
| *L. buergeri* | LJAMM–CNP 2744 |  | *AY173912* | AY173843 | AY367868 | AY367896 |  |  |  |  |  |  |  |  |  |  |
| *L. kingii* | LJAMM–CNP 326/LJAMM3040 |  | KF969053 | JN614929 | DQ237465 | KF968680 |  | JF272908 | KF967803 |  |  |  |  |  |  |  |
| *L. lineomaculatus* | LJAMM–CNP 7471/SDSU4268 |  | JX522193 | JX522338 | AY367875 | KF968687 |  | KF967611 | KF967809 |  |  |  |  |  |  |  |
| *L. petrophilus* | LJAMM–CNP 11121/BYU47098 |  | KF969091 | JN847092 | AY367849 | KF968714 |  | KF967641 | KF967837 |  |  |  |  |  |  |  |
| *P. aguedae* | SSUC–Re 588 |  | KT203835 | KT203826 | KT203845 | KT203818 |  |  |  |  |  |  |  |  |  |  |
| *P. alicahuense* | JT 130 |  | MH198576 | MH198593 |  | MH198607 |  |  | MH198619 |  |  |  |  |  |  |  |
| *P. antofagastensis* | MACN 44599 |  | KT203842 | KT203828 | KT203859 | KT203824 |  |  |  |  |  |  |  |  |  |  |
| *P. bibronii* | SSUC–Re 0429 |  | KT203840 | KT203829 | KT203857 | KT203822 |  |  |  |  |  |  |  |  |  |  |
| *P. damasense* | JT 50 |  | MH198577 | MH198595 |  | MH198609 |  |  | MH198621 |  |  |  |  |  |  |  |
| *P. darwini* | JT 320 |  | MH198581 | MH198599 |  |  |  |  |  |  |  |  |  |  |  |  |
| *P. denotatus* | MCN 3160 |  | KT203838 | KT203833 | KT203853 | KT203820 |  |  |  |  |  |  |  |  |  |  |
| *P. dorsimaculatus* | LJAMM–CNP 983/MCN 3733 |  | JF272814 | JF272781 | KT203856 | JX969518 | JX969596 | JX969498 | JX969421 | JX969124 | JX969316 | JX969172 | JX969111 | JX969217 |  | JX969268 |
| *P. extrilidus* | LJAMM–CNP 538/MCN 2665 |  | JX969070 | JX969019 | KT203851 | JX969527 | JX969605 | JX969507 |  | JX969133 | JX969325 | JX969180 |  | JX969226 |  | JX969277 |
| *P. fiambala* | MCN 2123 |  | KT203836 | KT203831 | KT203850 | KT203819 |  |  |  |  |  |  |  |  |  |  |
| *P. indistinctus* | CHIVC356/LJAMM–CNP 2124/MCN3954 | KU565066 | JX969084 | JX969033 | MG888413 | JX969538 | JX969568 | JX969470 | JX969441 | JX969147 | JX969339 | JX969189 | JX969369 | JX969240 | JX969394 | JX969290 |
| *P. laurenti* | MCN 3133 |  | MCN 3133 |  | KT203848 | MCN 3133 |  |  |  |  |  |  |  |  |  |  |
| *P. loboi* | LJAMM–CNP 3442 |  | JX969071 | JX969020 |  |  | JX969606 | JX969508 | JX969428 | JX969134 | JX969326 | JX969181 | JX969119 | JX969227 |  | JX969278 |
| *P. mallimaccii* | LJAMM–CNP 2035/MCN1741 |  | JX969062 | JX969011 | KT203847 | JX969519 | JX969597 | JX969499 | JX969422 |  | JX969317 | JX969173 | JX969112 | JX969218 |  | JX969269 |
| *P. maulense* | MZUC 35959 |  | MH198583 | MH198601 |  | MH198612 |  |  | MH198625 |  |  |  |  |  |  |  |
| *P. palluma* | MCN 3627 |  | KT203839 | KT203834 | KT203854 | KT203821 |  |  |  |  |  |  |  |  |  |  |
| *P. punae* | CHIVC418/LJAMM–CNP 2699 | KU565111 | JX969064 | JX969013 |  | JX969521 | JX969599 | JX969501 |  | JX969127 | JX969319 | JX969175 | JX969114 | JX969220 |  | JX969271 |
| *P. querque* | LJAMM–CNP 8060/MCN 3857 |  | JX969069 | JX969018 | KT203863 | JX969526 | JX969604 | JX969506 | JX969427 | JX969132 | JX969324 | JX969179 | JX969118 | JX969225 |  | JX969276 |
| *P. roigorum* | LJAMM–CNP 4434/MCN 2113 |  | JX969065 | JX969014 | KT203849 | JX969522 | JX969600 | JX969502 |  | JX969128 | JX969320 |  | JX969115 | JX969221 |  | JX969272 |
| *P. somuncurensis* | CHIVC494/LJAMM–CNP 4453/MCN4550 | KU565117 | JX969089 | JX969038 | MG888419 | JX969543 | JX969573 | JX969475 | JX969446 | JX969151 | JX969343 | JX969194 | JX969373 | JX969245 | JX969399 | JX969295 |
| *P.* sp. 3 | LJAMM–CNP 5390 |  | JX969072 | JX969021 |  |  | JX969607 | JX969509 | JX969429 | JX969135 | JX969327 |  | JX969120 | JX969228 |  | JX969279 |
| *P.* sp. 4 | LJAMM–CNP 5314 |  | JX969073 | JX969022 |  | JX969528 | JX969608 | JX969510 | JX969430 | JX969136 | JX969328 | JX969182 |  | JX969229 |  | JX969280 |
| *P.* sp. 5 | LJAMM–CNP 5285 |  | JX969074 | JX969023 |  |  | JX969609 | JX969511 | JX969431 | JX969137 | JX969329 |  |  | JX969230 |  | JX969281 |
| *P.* sp. 8 | LJAMM–CNP 6175 |  | JX969077 | JX969026 |  | JX969531 | JX969612 | JX969514 | JX969434 | JX969140 | JX969332 | JX969184 |  | JX969233 |  | JX969284 |
| *P.* sp. 9 | LJAMM–CNP 5222 |  | JX969078 | JX969027 |  | JX969532 | JX969613 | JX969515 | JX969435 | JX969141 | JX969333 | JX969185 |  | JX969234 |  | JX969285 |
| *P.* sp. 10 | LJAMM–CNP 7900 |  | JX969079 | JX969028 |  | JX969533 | JX969614 | JX969516 | JX969436 | JX969142 | JX969334 |  | JX969122 | JX969235 |  |  |
| *P.* sp. gua | MCN 1642 |  | KT203844 |  | KT203846 |  |  |  |  |  |  |  |  |  |  |  |
| *P.* sp. usp | LJAMM–CNP 2800/MCN 2660 |  | JX969063 | JX969012 | KT203862 | JX969520 | JX969598 | JX969500 | JX969423 | JX969126 | JX969318 | JX969174 | JX969113 | JX969219 |  | JX969270 |
| *P. timi* | LJAMM–CNP 10560 |  | JX969076 | JX969025 |  | JX969530 | JX969612 | JX969513 | JX969433 | JX969139 | JX969331 |  | JX969121 | JX969232 |  | JX969283 |
| *P. tromen* | LJAMM–CNP 5190/MCN 3713 |  | JX969068 | JX969017 | KT203855 | JX969525 | JX969603 | JX969505 | JX969426 | JX969131 | JX969323 | JX969178 |  | JX969224 |  | JX969275 |
| *P. verdugo* | LJAMM–CNP 5793 |  | JX969066 | JX969015 |  | JX969523 | JX969601 | JX969503 | JX969424 | JX969129 | JX969321 | JX969176 | JX969116 | JX969222 |  | JX969273 |
| *P. vociferator* | LJAMM–CNP 3432 |  | JX969067 | JX969016 |  | JX969524 | JX969602 | JX969504 | JX969425 | JX969130 | JX969322 | JX969177 | JX969117 | JX969223 |  | JX969274 |
| *P. williamsi* | MCN 2812 |  | KT203837 | KT203827 | KT203852 |  |  |  |  |  |  |  |  |  |  |  |