The following appendices accompany the article

# Mitochondrial DNA variation and cryptic speciation within the free-living marine nematode *Pellioditis marina*


**S. Derycke[1,4,*], T. Remerie[1,4], A. Vierstraete[2,4], T. Backeljau[3], J. Vanfleteren[2,4], M. Vincx[1], T. Moens[1]**

[1]Department of Biology, Marine Biology Section, Ghent University, Krijgslaan 281, S8, 9000 Ghent, Belgium
[2]Department of Biology, Ghent University, K. L. Ledeganckstraat 35, 9000 Ghent, Belgium
[3]Royal Belgian Institute of Natural Sciences, Vautierstraat 29, 1000 Brussels, Belgium
[4]CeMoFE, Ghent University, K. L. Ledeganckstraat 35, 9000 Ghent, Belgium
**Present address:* Krijgslaan 281. Email: s.derycke@ugent.be



*Marine Ecology Progress Series 300:91–103 (2005)*


**Appendix 1.** *Pellioditis marina*. Partial cytochrome oxidase c subunit 1 sequences of the 32 haplotypes (H) with EMBL accession numbers (AN). Only variable sites and their positions are presented. The 4 haplotype groups (HG) are also indicated. Unique fixed differences for each haplotype group are in bold

| HG | AN | H | 4 | 12 | 15 | 18 | 36 | 39 | 54 | 60 | 66 | 69 | 78 | 90 | 93 | 96 | 105 | 117 | 126 | 135 | 138 | 144 | 150 | 153 | 156 | 162 | 165 | 171 | 177 | 186 | 189 | 192 | 201 | 207 | 210 | 213 | 216 | 219 | 222 | 234 | 243 | 252 | 258 | 265 | 273 | 276 | 279 | 282 | 285 | 291 | 292 | 297 | 306 | 309 | 312 | 318 | 321 | 325 | 327 | 330 | 336 | 345 | 351 | 354 | 363 | 371 | 372 | 375 | 376 | 377 | 378 | 387 | 388 | 390 | 393 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IV | AJ867453 | G2 | T | A | T | T | G | T | T | **G** | A | A | A | T | T | T | T | A | **T** | **C** | T | A | A | A | T | T | A | T | A | T | T | T | T | T | T | **C** | A | T | A | T | T | T | G | G | A | A | T | G | A | G | T | **A** | **C** | A | T | A | T | C | T | T | T | T | T | T | T | A | T | T | A | C | T | T | G | T | T |
| IV | AJ867454 | G3 | . | . | . | . | . | A | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | ? | ? | . | ? | . |
| IV | AJ867452 | G1 | . | . | . | . | . | A | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | C | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | A | . | A | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867447 | A | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | G | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **G** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | . | . | . | **A** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867450 | E | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | G | A | **A** | . | G | . | . | C | . | . | A | . | **A** | **G** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | . | . | . | **A** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867478 | W | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | G | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **G** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | C | T | . | . | . | **A** | . | . | . | A | **A** | . | . | . | . | . | . | . | G | A | A | C | . | . |
| I | AJ867458 | K | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | G | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **G** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | . | . | . | **G** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867465 | P | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | . | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **G** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | G | . | . | **G** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867457 | J | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | . | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **A** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | . | . | . | **A** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867461 | N | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | . | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **A** | . | . | . | A | A | T | A | . | . | . | C | . | . | . | T | . | A | **G** | A | . | T | T | . | . | . | **A** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867475 | T | . | G | **A** | . | A | A | . | A | . | T | T | . | . | . | . | . | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **A** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | . | . | . | **A** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867451 | F | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | . | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **A** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | . | C | . | **A** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867449 | D | . | . | **A** | . | A | A | . | A | . | T | T | . | C | . | . | . | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **A** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | C | T | T | . | . | . | **A** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867459 | L | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | . | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **A** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | C | T | T | . | . | . | **A** | . | . | A | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867456 | I | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | . | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **A** | . | . | . | A | A | C | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | . | . | . | **A** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867448 | C | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | . | A | **A** | . | G | . | . | . | . | . | A | . | **A** | **A** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | . | . | . | **G** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | C |
| I | AJ867455 | H | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | . | A | **G** | . | G | . | . | . | . | . | A | . | **A** | **A** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | . | . | . | **G** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | . | A | . |
| I | AJ867477 | U | . | . | **A** | . | A | A | . | A | . | T | T | . | . | . | . | . | A | **G** | . | G | . | . | C | . | . | A | . | **A** | **A** | . | . | . | A | A | T | A | . | . | . | . | . | . | . | T | . | A | **G** | A | . | T | T | . | . | . | **G** | . | . | . | A | **A** | . | . | . | . | . | . | . | . | A | A | C | . | . |
| III | AJ867460 | M | . | . | . | **A** | A | A | . | A | **G** | . | T | . | . | **A** | **A** | . | A | T | **C** | . | . | **T** | . | . | **G** | A | T | **G** | . | . | . | . | . | **T** | T | . | . | **A** | . | . | A | . | . | . | . | A | . | A | . | T | T | . | . | . | . | T | A | A | A | . | . | . | . | . | . | . | . | . | . | A | . | . | . |
| II | AJ867463 | O1 | . | G | . | . | A | A | A | A | . | T | . | **A** | . | . | . | . | A | T | . | . | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | G | . | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | C | . | . | T | A | A | . | . | **A** | **A** | . | . | **C** | . | . | . | . | . | . | . | . |
| II | AJ867464 | O2 | . | G | . | . | A | A | A | A | . | T | . | **A** | . | . | . | . | A | T | . | . | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | . | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | C | . | . | T | A | A | . | . | **A** | **A** | . | G | **C** | . | . | . | . | . | . | . | . |
| II | AJ867476 | V | . | G | . | . | . | A | A | A | . | T | . | **A** | . | . | . | . | A | T | . | G | **T** | . | . | C | . | . | T | . | . | . | **A** | **A** | A | A | . | A | T | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | C | . | . | T | A | A | . | . | **A** | **A** | A | . | **C** | A | T | . | . | A | . | . | . |
| II | AJ867466 | R | C | . | . | . | A | A | A | A | . | T | . | **A** | . | . | . | . | A | T | . | G | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | T | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | . | . | . | T | A | A | . | . | **A** | **A** | . | . | **C** | . | . | . | . | . | . | . | . |
| II | AJ867467 | R1 | . | . | . | . | A | A | A | A | . | T | . | **A** | . | . | . | . | A | T | . | G | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | T | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | . | . | . | T | A | A | . | . | **A** | **A** | . | . | **C** | . | . | . | . | . | . | . | . |
| II | AJ867469 | R3 | . | G | . | . | A | A | A | A | . | T | . | **A** | . | . | . | . | A | T | . | G | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | T | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | . | . | . | T | A | A | . | . | **A** | **A** | . | . | **C** | . | . | . | . | . | . | . | . |
| II | AJ867468 | R2 | . | . | . | . | A | A | A | A | . | T | . | **A** | . | . | . | . | A | T | . | G | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | T | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | C | . | . | T | A | A | . | . | **A** | **A** | . | . | **C** | . | . | . | . | . | . | . | . |
| II | AJ867470 | R4 | . | . | . | . | A | A | A | A | . | T | . | **A** | . | . | . | . | A | T | . | G | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | T | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | C | . | . | T | A | A | . | . | **A** | **G** | . | . | **C** | . | . | . | . | . | . | . | . |
| II | AJ867471 | R5 | . | . | . | . | A | A | A | A | . | T | . | **A** | . | . | . | . | A | T | . | . | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | T | . | **A** | . | A | **T** | **G** | T | **G** | A | . | **T** | . | T | T | . | C | . | . | T | A | A | . | . | **A** | **A** | . | . | **C** | . | . | . | . | . | . | . | . |
| II | AJ867472 | S | . | . | . | . | A | A | A | A | . | T | . | **A** | . | . | . | . | A | T | . | . | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | T | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | A | T | T | . | C | . | . | T | A | A | . | . | **A** | **A** | . | . | **C** | . | . | . | . | . | . | . | . |
| II | AJ867473 | S1 | . | . | . | . | A | A | . | A | . | T | . | **A** | . | . | . | . | A | T | . | . | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | T | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | C | G | . | T | A | A | . | . | **A** | **A** | . | . | **C** | . | . | . | . | . | . | . | . |
| II | AJ867474 | S2 | . | . | . | . | A | A | . | A | . | T | . | **A** | . | . | . | . | A | T | . | G | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | T | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | C | . | . | T | A | A | . | . | **A** | **A** | . | . | **C** | . | . | . | . | . | . | . | . |
| II | AJ867462 | O | . | G | . | . | A | A | A | A | . | T | . | **G** | . | . | . | . | A | T | . | . | **T** | . | . | . | . | . | T | . | . | . | **A** | **A** | A | A | . | A | . | . | **A** | . | A | **T** | **G** | T | **A** | A | . | **T** | . | T | T | . | C | . | . | T | A | A | . | . | **A** | **A** | . | . | **C** | . | . | . | . | A | . | A | . |

**Appendix 2.** *Pellioditis marina*. ITS1 sequences of the 16 haplotypes (H) with EMBL accession numbers (AN). The 4 haplotype groups (HG) are also indicated. Only variable sites and their positions are presented. Unique fixed-length differences for haplotype groups PmII and PmIII in bold

| HG | AN | H | 128 | 129 | 130 | 131 | 132 | 133 | 136 | 137 | 139 | 140 | 141 | 142 | 143 | 144 | 148 | 150 | 153 | 157 | 159 | 160 | 161 | 169 | 170 | 173 | 177 | 178 | 179 | 180 | 184 | 185 | 187 | 190 | 191 | 192 | 193 | 194 | 195 | 197 | 205 | 207 | 208 | 209 | 210 | 211 | 214 | 218 | 219 | 220 | 221 | 223 | 227 | 228 | 229 | 236 | 240 | 241 | 242 | 247 | 248 | 250 | 251 | 252 | 256 | 259 | 260 | 261 | 262 | 268 | 269 | 270 | 271 | 273 | 274 | 277 | 279 | 280 | 281 | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 291 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| III | AJ867068 | M | C | G | T | A | A | T | T | G | T | - | - | C | A | A | T | G | A | A | A | **A** | C | T | T | A | A | A | A | G | A | C | T | T | T | T | C | **C** | **T** | T | T | T | C | T | C | A | C | T | T | T | A | G | T | A | C | T | T | - | A | T | G | T | T | C | C | T | C | T | G | C | C | G | G | A | A | - | - | - | - | - | - | - | - | - | G | A | A | C |
| II | AJ867064 | R1 | T | T | G | G | C | C | A | A | C | **A** | T | . | . | G | C | A | T | G | G | - | . | A | A | G | G | . | . | T | C | T | A | C | C | A | A | - | - | C | C | C | T | C | A | G | A | C | C | . | T | A | . | C | T | C | . | A | T | C | C | C | C | T | T | . | T | . | T | A | . | . | . | . | G | A | G | G | **T** | **G** | **G** | **G** | G | C | . | . | T | T |
| II | AJ867072 | S2 | T | T | G | G | C | C | A | A | C | **A** | T | . | . | G | C | A | T | G | G | - | . | A | A | G | G | . | . | T | C | T | A | C | C | A | A | - | - | C | C | C | T | C | A | G | A | C | C | . | T | A | . | C | T | C | . | A | T | C | C | C | C | T | T | . | T | . | T | A | . | . | . | . | G | A | G | G | **T** | **G** | **G** | **G** | G | C | . | . | T | T |
| II | AJ867070 | R2 | T | T | G | G | C | C | A | A | C | **A** | T | . | . | G | C | A | T | G | G | - | . | A | A | G | G | . | . | T | C | T | A | C | C | A | A | - | - | C | C | C | T | C | A | G | A | C | C | . | T | A | . | C | T | C | . | A | T | C | C | C | C | T | T | . | T | . | T | A | . | . | . | . | G | A | G | G | **T** | **G** | **G** | **G** | G | C | . | . | T | T |
| II | AJ867065 | O2 | T | T | G | G | C | C | A | A | C | **A** | T | . | . | G | C | A | T | G | G | - | . | A | A | G | G | . | . | T | C | T | A | C | C | A | A | - | - | C | C | C | T | C | A | G | A | C | C | . | T | A | . | C | T | C | . | A | T | C | C | C | C | T | T | . | T | . | T | A | . | . | . | . | G | A | G | G | **T** | **G** | **G** | **G** | G | C | . | . | T | T |
| II | AJ867066 | O | T | T | G | G | C | C | A | A | C | **A** | T | . | . | G | C | A | T | G | G | - | . | A | A | G | G | . | . | T | C | T | A | C | C | A | A | - | - | C | C | C | T | C | A | G | A | C | C | . | T | A | . | C | T | C | . | A | T | C | C | C | C | T | T | . | T | . | T | A | . | . | . | . | G | A | G | G | **T** | **G** | **G** | **G** | G | C | . | . | T | T |
| II | AJ867067 | R | T | T | G | G | C | C | A | A | C | **A** | T | . | . | G | C | A | T | G | G | - | . | A | A | G | G | . | . | T | C | T | A | C | C | A | A | - | - | C | C | C | T | C | A | G | A | C | C | . | T | A | . | C | T | C | . | A | T | C | C | C | C | T | T | . | T | . | T | A | . | . | . | . | G | A | G | G | **T** | **G** | **G** | **G** | G | C | . | . | T | T |
| II | AJ867069 | S | T | T | G | G | C | C | A | A | C | **A** | T | . | . | G | C | A | T | G | G | - | . | A | A | G | G | . | . | T | C | T | A | C | C | A | A | - | - | C | C | C | T | C | A | G | A | C | C | . | T | A | . | C | T | C | . | A | T | C | C | C | C | T | T | . | T | . | T | A | . | . | . | . | G | A | G | G | **T** | **G** | **G** | **G** | G | C | . | . | T | T |
| I | AJ867057 | D | T | T | C | . | C | . | A | A | . | - | T | T | G | G | . | . | C | G | G | - | T | A | A | G | T | T | T | C | C | T | A | C | . | G | A | - | - | . | C | C | T | C | A | . | A | C | . | C | T | . | A | T | T | C | G | T | G | G | A | C | C | G | T | G | T | C | T | A | A | C | - | G | G | T | T | G | - | - | - | - | G | A | . | . | C | T |
| I | AJ867071 | P | T | T | C | . | C | . | A | A | . | - | T | T | G | G | . | . | C | G | G | - | T | A | A | G | T | T | T | C | C | T | A | C | . | G | A | - | - | . | C | C | T | C | A | . | A | C | . | C | T | . | A | T | T | C | G | T | G | G | A | C | C | G | T | G | T | C | T | A | A | C | - | G | G | T | T | G | - | - | - | - | G | A | . | . | C | T |
| I | AJ867061 | A | T | T | C | . | C | . | A | A | . | - | T | T | G | G | . | . | C | G | G | - | T | A | A | G | T | T | T | C | C | T | A | C | . | G | A | - | - | . | C | C | T | C | A | . | A | C | . | C | T | . | A | T | T | C | G | T | G | G | A | C | C | G | T | G | T | C | T | A | A | C | - | G | G | T | T | G | - | - | - | - | G | A | . | . | C | T |
| I | AJ867062 | C | T | T | C | . | C | . | A | A | . | - | T | T | G | G | . | . | C | G | G | - | T | A | A | G | T | T | T | C | C | T | A | C | . | G | A | - | - | . | C | C | T | C | A | . | A | C | . | C | T | . | A | T | T | C | G | T | G | G | A | C | C | G | T | G | T | C | T | A | A | C | - | G | G | T | T | G | - | - | - | - | G | A | . | . | C | T |
| I | AJ867060 | F | T | T | C | . | C | . | A | A | . | - | T | T | G | G | . | . | C | G | G | - | T | A | A | G | T | T | T | C | C | T | A | C | . | G | A | - | - | . | C | C | T | C | A | . | A | C | . | C | T | . | A | T | T | C | G | T | G | G | A | C | C | G | T | G | T | C | T | A | A | C | - | G | G | T | T | G | - | - | - | - | G | A | . | . | C | T |
| I | AJ867059 | J | T | T | C | . | C | . | A | A | . | - | T | T | G | G | . | . | C | G | G | - | T | A | A | G | T | T | T | C | C | T | A | C | . | G | A | - | - | . | C | C | T | C | A | . | A | C | . | C | T | . | A | T | T | C | G | T | G | G | A | C | C | G | T | G | T | C | T | A | A | C | - | G | G | T | T | G | - | - | - | - | G | A | . | . | C | T |
| I | AJ867058 | H | T | T | C | . | C | . | A | A | . | - | T | T | G | G | . | . | C | G | G | - | T | A | A | G | T | T | T | C | C | T | A | C | . | G | A | - | - | . | C | C | T | C | A | . | A | C | . | C | T | . | A | T | T | C | G | T | G | G | A | C | C | G | T | G | T | C | T | A | A | C | - | G | G | T | T | G | - | - | - | - | G | A | . | . | C | T |
| IV | AJ867063 | G2 | T | T | C | . | . | . | A | A | . | - | T | . | G | G | . | . | C | G | G | - | T | A | A | G | T | T | T | C | C | T | A | C | . | G | A | - | - | . | C | C | T | C | A | . | A | C | . | C | T | . | A | T | T | C | - | - | G | . | A | C | C | G | T | . | T | - | T | A | - | - | - | G | . | G | T | G | - | - | - | - | G | T | T | T | - | . |

| HG | AN | H | 293 | 294 | 295 | 296 | 298 | 299 | 300 | 301 | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311 | 317 | 323 | 326 | 327 | 330 | 331 | 332 | 333 | 335 | 340 | 345 | 349 | 350 | 351 | 352 | 353 | 356 | 357 | 360 | 366 | 367 | 376 | 377 | 378 | 381 | 383 | 388 | 390 | 391 | 392 | 393 | 394 | 395 | 396 | 397 | 398 | 399 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 414 | 417 | 420 | 429 | 430 | 433 | 434 | 435 | 436 | 441 | 444 | 445 | 446 | 448 | 451 | 452 | 453 | 454 | 455 | 456 | 458 | 464 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| III | AJ867068 | M | A | G | C | G | G | G | T | - | G | A | A | A | G | C | C | C | A | T | C | A | A | T | - | - | - | - | T | G | G | G | C | A | T | A | T | A | T | T | T | - | T | A | A | G | C | T | T | - | - | - | - | - | - | - | G | T | T | A | - | - | - | - | - | - | A | T | T | **A** | **C** | A | C | G | T | G | T | - | - | A | T | G | T | T | A | A | T | T |
| II | AJ867064 | R1 | G | T | . | . | . | T | . | C | . | T | C | C | T | G | G | . | C | . | . | . | G | . | T | A | C | T | C | A | . | T | G | T | A | T | C | T | . | . | C | C | . | C | G | T | T | G | . | **C** | **A** | **T** | **C** | **A** | **T** | **G** | . | A | C | . | **T** | **G** | **G** | **T** | **G** | **C** | G | C | C | - | - | C | T | A | . | . | A | G | G | T | C | . | C | C | T | T | C | A |
| II | AJ867072 | S2 | G | T | . | . | . | T | . | C | . | T | C | C | T | G | G | . | C | . | . | . | G | . | T | A | C | T | C | A | . | T | G | T | A | T | C | T | . | . | C | C | . | C | G | T | T | G | . | **C** | **A** | **T** | **C** | **A** | **T** | **G** | . | A | C | . | **T** | **G** | **G** | **T** | **G** | **C** | G | C | C | - | - | C | T | A | . | . | A | G | G | T | C | . | C | C | T | T | C | A |
| II | AJ867070 | R2 | G | T | . | . | . | T | . | C | . | T | C | C | T | G | G | . | C | . | . | . | G | . | T | A | C | T | C | A | . | T | G | T | A | T | C | T | . | . | C | C | . | C | G | T | T | G | . | **C** | **A** | **T** | **C** | **A** | **T** | **G** | . | A | C | . | **T** | **G** | **G** | **T** | **G** | **C** | G | C | C | - | - | C | T | A | . | . | A | G | G | T | C | . | C | C | T | T | C | A |
| II | AJ867065 | O2 | G | T | . | . | . | T | . | C | . | T | C | C | T | G | G | . | C | . | . | . | G | . | T | A | C | T | C | A | . | T | G | T | A | T | C | T | . | . | C | C | . | C | G | T | T | G | . | **C** | **A** | **T** | **C** | **A** | **T** | **G** | . | A | C | . | **T** | **G** | **G** | **T** | **G** | **C** | G | C | C | - | - | - | T | A | . | . | A | G | G | T | C | . | C | C | T | T | C | A |
| II | AJ867066 | O | G | T | . | . | . | T | . | C | . | T | C | C | T | G | G | . | C | . | . | . | G | . | T | A | C | T | C | A | . | T | G | T | A | T | C | T | . | . | C | C | . | C | G | T | T | G | . | **C** | **A** | **T** | **C** | **A** | **T** | **G** | . | A | C | . | **T** | **G** | **G** | **T** | **G** | **C** | G | C | C | - | - | - | T | A | . | . | A | G | G | T | C | . | C | C | T | T | C | A |
| II | AJ867067 | R | G | T | . | . | . | T | . | C | . | T | C | C | T | G | G | . | C | . | . | . | G | . | T | A | C | T | C | A | . | T | G | T | A | T | C | T | . | . | C | C | . | C | G | T | T | G | . | **C** | **A** | **T** | **C** | **A** | **T** | **G** | . | A | C | . | **T** | **G** | **G** | **T** | **G** | **C** | G | C | C | - | - | - | T | A | . | . | A | G | G | T | C | . | C | C | T | T | C | A |
| II | AJ867069 | S | G | T | . | . | . | T | . | C | . | T | C | C | T | G | G | . | C | . | . | . | G | . | T | A | C | T | C | A | . | T | G | T | A | T | C | T | . | . | C | C | . | C | G | T | T | G | . | **C** | **A** | **T** | **C** | **A** | **T** | **G** | . | A | C | . | **T** | **G** | **G** | **T** | **G** | **C** | G | C | C | - | - | - | T | A | . | . | A | G | G | T | C | . | C | C | T | T | C | A |
| I | AJ867057 | D | C | T | G | C | A | T | C | C | T | G | T | C | . | G | G | G | T | A | T | - | G | . | T | A | A | G | C | A | A | C | G | T | A | T | . | C | C | C | . | C | . | C | . | . | . | G | - | - | - | - | - | - | - | - | - | A | - | - | - | - | - | - | - | - | G | C | C | - | - | - | T | T | . | A | G | T | C | . | C | A | C | C | T | T | C | A |
| I | AJ867071 | P | C | T | G | C | A | T | C | C | T | G | T | C | . | G | G | G | T | A | T | - | G | . | T | A | A | G | C | A | A | C | G | T | A | T | . | C | C | C | . | C | . | C | . | . | . | G | - | - | - | - | - | - | - | - | - | A | - | - | - | - | - | - | - | - | G | C | C | - | - | - | T | T | . | A | G | T | C | . | C | A | C | C | T | T | C | A |
| I | AJ867061 | A | C | T | G | C | A | T | C | C | T | G | T | C | . | G | G | G | T | A | T | - | G | . | T | A | A | G | C | A | A | C | G | T | A | T | . | C | C | C | . | C | . | C | . | . | . | G | - | - | - | - | - | - | - | - | - | A | - | - | - | - | - | - | - | - | G | C | C | - | - | - | T | T | . | A | G | T | C | . | C | A | C | C | T | T | C | A |
| I | AJ867062 | C | C | T | G | C | A | T | C | C | T | G | T | C | . | G | G | G | T | A | T | - | G | . | T | A | A | G | C | A | A | C | G | T | A | T | . | C | C | C | . | C | . | C | . | . | . | G | - | - | - | - | - | - | - | - | - | A | - | - | - | - | - | - | - | - | G | C | C | - | - | - | T | T | . | A | G | T | C | . | C | A | C | C | T | T | C | A |
| I | AJ867060 | F | C | T | G | C | A | T | C | C | T | G | T | C | . | G | G | G | T | A | T | - | G | . | T | A | A | G | C | A | A | C | G | T | A | T | . | C | C | C | . | C | . | C | . | . | . | G | - | - | - | - | - | - | - | - | - | A | - | - | - | - | - | - | - | - | G | C | C | - | - | - | T | T | . | A | G | T | C | . | C | A | C | C | T | T | C | A |
| I | AJ867059 | J | C | T | G | C | A | T | C | C | T | G | T | C | . | G | G | G | T | A | T | - | G | . | T | A | A | G | C | A | A | C | G | T | A | T | . | C | C | C | . | C | . | C | . | . | . | G | - | - | - | - | - | - | - | - | - | A | - | - | - | - | - | - | - | - | G | C | C | - | - | - | T | T | . | A | G | T | C | . | C | A | C | C | T | T | C | A |
| I | AJ867058 | H | C | T | G | C | A | T | C | C | T | G | T | C | . | G | G | G | T | A | T | - | G | . | T | A | A | G | C | A | A | C | G | T | A | T | . | C | C | C | . | C | . | C | . | . | . | G | - | - | - | - | - | - | - | - | - | A | - | - | - | - | - | - | - | - | G | C | C | - | - | - | T | T | . | A | G | T | C | . | C | A | C | C | T | T | C | A |
| IV | AJ867063 | G2 | C | . | T | A | T | T | C | C | T | G | . | C | T | T | T | G | T | A | T | - | G | A | T | A | C | T | C | A | . | - | G | T | A | T | . | C | . | C | . | C | A | C | . | . | . | G | - | - | - | - | - | - | - | - | - | A | - | - | - | - | - | - | - | - | G | C | C | - | - | - | A | A | C | A | G | T | C | . | C | A | C | C | T | T | C | A |

**Appendix 3.** *Pellioditis marina*. ITS2 sequences of 16 haplotypes (H) with EMBL accession numbers (AN). Only variable sites and their positions are presented. The 4 haplotype groups (HG) are also indicated. Unique fixed-length differences for haplotype groups Pm II and PmIII in bold

| HG | AN | H | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 9 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 |
| | | | 1 | 5 | 2 | 4 | 6 | 7 | 8 | 1 | 3 | 4 | 6 | 7 | 1 | 8 | 1 | 7 | 2 | 3 | 3 | 5 | 7 | 3 | 8 | 9 | 1 | 3 | 6 | 9 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 3 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 4 | 5 |
| III | AJ867068 | M | C | T | T | A | A | G | T | A | G | C | - | - | A | - | A | A | T | G | A | T | - | C | C | T | T | - | A | G | T | **G** | **A** | **T** | **T** | **G** | **G** | **G** | T | A | C | C | A | A | T | C | A | C | T |
| II | AJ867064 | R1 | T | A | C | G | G | T | G | T | C | T | A | C | G | A | T | G | C | A | T | C | C | A | T | . | . | C | . | A | C | - | - | - | - | - | - | - | . | C | T | . | G | G | A | . | G | . | . |
| II | AJ867072 | S2 | T | A | C | G | G | T | G | T | C | T | A | C | G | A | T | G | C | A | T | C | C | A | T | . | . | C | . | A | C | - | - | - | - | - | - | - | . | C | T | . | G | G | A | . | G | . | . |
| II | AJ867070 | R2 | T | A | C | G | G | T | G | T | C | T | A | C | G | A | T | G | C | A | T | C | C | A | T | . | . | C | . | A | C | - | - | - | - | - | - | - | . | C | T | . | G | G | A | . | G | . | . |
| II | AJ867065 | O2 | T | A | C | G | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | . | . | - | . | A | C | - | - | - | - | - | - | - | - | C | T | . | G | G | A | . | G | . | . |
| II | AJ867066 | O2 | T | A | C | G | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | . | . | - | . | A | C | - | - | - | - | - | - | - | - | C | T | . | G | G | A | . | G | . | . |
| II | AJ867067 | R | T | A | C | G | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | . | . | - | . | A | C | - | - | - | - | - | - | - | - | C | T | . | G | G | A | . | G | . | . |
| II | AJ867069 | S | T | A | C | G | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | . | . | - | . | A | C | - | - | - | - | - | - | - | - | C | T | . | G | G | A | . | G | . | . |
| I | AJ867057 | D | T | A | C | . | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | A | C | - | . | A | - | - | - | - | - | - | - | - | . | C | T | T | G | - | A | . | G | T | C |
| I | AJ867071 | P | T | A | C | . | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | A | C | - | . | A | C | - | - | - | - | - | - | - | . | C | T | T | G | - | A | . | G | T | . |
| I | AJ867061 | A | T | A | C | . | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | A | C | - | . | A | - | - | - | - | - | - | - | - | C | C | T | T | G | - | A | . | G | T | . |
| I | AJ867062 | C | T | A | C | . | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | A | C | - | . | A | - | - | - | - | - | - | - | - | C | C | T | T | G | - | A | . | G | T | . |
| I | AJ867060 | F | T | A | C | . | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | A | C | - | . | A | - | - | - | - | - | - | - | - | C | C | T | T | G | - | A | . | G | T | . |
| I | AJ867059 | J | T | A | C | . | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | A | C | - | . | A | - | - | - | - | - | - | - | - | C | C | T | T | G | - | A | . | G | T | . |
| I | AJ867058 | H | T | A | C | . | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | A | C | - | . | A | - | - | - | - | - | - | - | - | C | C | T | T | G | - | A | . | G | T | . |
| IV | AJ867063 | G2 | T | A | C | . | G | T | G | T | C | T | A | C | G | - | T | G | C | A | T | C | T | A | T | A | C | - | . | A | - | - | - | - | - | - | - | - | C | C | T | T | G | - | A | . | G | T | . |

| HG | AN | H | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | | 9 | 0 | 1 | 2 | 3 | 5 | 6 | 8 | 9 | 0 | 2 | 3 | 4 | 5 | 6 | 2 | 3 | 5 | 6 | 5 | 8 | 1 | 4 | 5 | 6 | 8 | 3 | 4 | 5 | 6 | 7 | 6 | 7 | 0 | 3 | 4 | 5 | 7 | 9 | 0 | 1 | 2 | 3 | 5 | 6 | 6 | 7 |
| III | AJ867068 | M | A | A | C | T | G | T | T | T | C | A | A | C | C | A | C | T | T | A | A | T | G | - | T | T | T | C | T | C | A | A | A | G | A | - | G | G | T | T | G | A | T | T | T | C | **A** | **G** |
| II | AJ867064 | R1 | G | G | T | C | C | A | A | . | G | T | T | G | A | C | A | C | A | T | . | . | A | A | A | C | C | T | G | A | T | T | G | C | T | T | C | T | A | . | T | T | A | C | G | A | - | - |
| II | AJ867072 | S2 | G | G | - | C | C | A | A | . | G | T | T | G | A | C | A | C | A | T | . | . | A | A | A | C | C | T | G | A | T | T | G | C | T | T | C | T | A | . | T | T | A | C | G | A | - | - |
| II | AJ867070 | R2 | G | G | - | C | C | A | A | . | G | T | T | G | A | C | A | C | A | T | . | . | A | A | A | C | C | T | G | A | T | T | G | C | T | T | C | T | A | . | T | T | - | C | G | A | - | - |
| II | AJ867065 | O2 | G | G | - | . | C | A | A | . | G | T | T | G | A | C | A | C | A | T | C | . | A | A | A | C | C | T | G | A | T | T | G | C | T | T | C | T | A | . | T | T | - | C | G | A | - | - |
| II | AJ867066 | O2 | G | G | - | . | C | A | A | . | G | T | T | G | A | C | A | C | A | T | C | . | A | A | A | C | C | T | G | A | T | T | G | C | T | T | C | T | A | . | T | T | - | C | G | A | - | - |
| II | AJ867067 | R | G | G | - | . | C | A | A | . | G | T | T | G | A | C | A | C | A | T | C | . | A | A | A | C | C | T | G | A | T | T | G | C | T | T | C | T | A | . | T | T | - | C | G | A | - | - |
| II | AJ867069 | S | G | G | - | . | C | A | A | . | G | T | T | G | A | C | A | C | A | T | C | . | A | A | A | C | C | T | G | A | T | T | G | C | T | T | C | T | A | . | T | T | - | C | G | A | - | - |
| I | AJ867057 | D | G | G | - | . | T | A | . | C | G | C | T | G | A | C | A | . | . | T | C | C | A | A | A | A | C | C | T | G | T | T | G | . | C | T | T | C | . | G | G | T | T | C | A | . | - | - | - |
| I | AJ867071 | P | G | G | - | . | T | A | . | C | G | C | T | G | A | C | A | . | . | T | C | C | A | A | A | A | C | C | T | G | T | T | G | . | C | T | T | C | . | G | G | T | T | C | A | . | - | - | - |
| I | AJ867061 | A | G | G | - | . | T | A | . | C | G | C | T | G | A | C | A | . | . | T | C | C | A | A | A | A | C | C | T | G | T | T | G | . | C | T | T | C | . | G | G | T | T | C | A | . | - | - | - |
| I | AJ867062 | C | G | G | - | . | T | A | . | C | G | C | T | G | A | C | A | . | . | T | C | C | A | A | A | A | C | C | T | G | T | T | G | . | C | T | T | C | . | G | G | T | T | C | A | . | - | - | - |
| I | AJ867060 | F | G | G | - | . | T | A | . | C | G | C | T | G | A | C | A | . | . | T | C | C | A | A | A | A | C | C | T | G | T | T | G | . | C | T | T | C | . | G | G | T | T | C | A | . | - | - | - |
| I | AJ867059 | J | G | G | - | . | T | A | . | C | G | C | T | G | A | C | A | . | . | T | C | C | A | A | A | A | C | C | T | G | T | T | G | . | C | T | T | C | . | G | G | T | T | C | A | . | - | - | - |
| I | AJ867058 | H | G | G | - | . | T | A | . | C | G | C | T | G | A | C | A | . | . | T | C | C | A | A | A | A | C | C | T | G | T | T | G | . | C | T | T | C | . | G | G | T | T | C | A | . | - | - | - |
| IV | AJ867063 | G2 | G | G | - | . | T | A | . | C | G | C | T | G | A | C | A | . | C | T | C | C | A | A | A | A | C | C | T | G | T | T | G | . | C | T | T | C | . | G | G | T | T | C | A | . | A | - | - |