# Supplementary Tables

**Supplementary Table S1.** PCR amplification conditions. Loci, names, sequences, annealing temperatures and sources of the primers used. At the bottom, PCR reagents, final concentrations and amplification details.

|  |  |  |  |
| --- | --- | --- | --- |
| **Locus [primers]** | **Primers 5’ 🡪 3’** | **Ta (ºC)** | **Source** |
| *cox*1 [Gaz2] | F: 5’-CCAACCAYAAAGATATWGGTAC -3’  R: 5’-GGATGACCAAARAACCAAAA-3’ | 49 | Lane *et al*. 2007 |
| *cox*1 [cox1-789F /cox1-1378R] | F: 5’-TNTAYCARCATTTATTTTGGTT-3’  R: 5’-TCYGGNATACGNCGNGGCATACC-3’ | 49 | Silberfeld *et al*. 2010 |
| *cox*3 [*cox*3-44F/cox3-739R] | F: 5’- CAACGNCAYCCWTTTCATTT -3’  R: 5’- CATCNACAAAATGCCAATACCA-3’ | 48 |
| nad1 [nad1-113F /nad1-895R] | 5’- CGWAAAATTATGGCNGGTATTCA -3’  5’- AGNGGYAARAAACAYTTCCAACC -3’ | 49 |
| *psa*A [psaA2-870F/ psaA2-1760R] | 5’-GGNGGWYTATGGTTAAGTGA-3’  5’-CCTCTWCCWGGWCCATCRCAWGG-3’ | 48 |
|  |  |  |  |
| **PCR Reagents | Final Conc.** | **PCR Step** | **T(ºC)** | **t(m’s)** |
| H2O | to 10uL | initial denaturation | 94 | 5’00 |
| Buffer | 1x | denaturation  annealing  extension | 94  ***Ta***  72 | 0’30  0’45  1’00 |
| MgCl2 | 2mM |
| dNTP’s | 0.125 μM |
| Primer F | 0.5 μM | final extension | 72 | 10’00 |
| Primer R | 0.5 μM |  |  |  |
| GoTaq | (5U/μL) | 1 U |  |  |  |
| DNA (1:100) (5 μL) |  |  |  |
|  |  |  |  |

**Supplementary Table S2.** List of *cox*1 sequences of *Cystoseira*, *Ericaria* and *Gongolaria* spp. from Genbank used in the present study. In grey instances where original IDs conflict with results from the present study.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | N | cox1 fragment | Original ID | Source | Genetic entity (this study) |
| MF768036-41 | 6 | 1 | *Cystoseira compressa* | Bruno de Sousa et al. 2019 | *Cystoseira compressa* |
| MF768042-44 | 3 | 1 | *Cystoseira compressa subsp. pustulata* | Bruno de Sousa et al. 2019 | *Cystoseira pustulata* |
| MF768045-47 | 3 | 1 | *Cystoseira humilis* | Bruno de Sousa et al. 2019 | *Cystoseira humilis* |
| MF768048-49 | 2 | 1 | *Cystoseira foeniculacea* | Bruno de Sousa et al. 2019 | *Cystoseira foeniculacea* |
| MH513831 | 1 | 2 | *Cystoseira humilis* | Orellana et al. 2019 | *Cystoseira humilis* |
| MH513832 | 1 | 2 | *Cystoseira aurantia* | Orellana et al. 2019 | *Cystoseira pustulata* |
| MH513833 | 1 | 2 | *Cystoseira compressa* | Orellana et al. 2019 | *Cystoseira compressa* |
| MH513834 | 1 | 2 | *Cystoseira foeniculacea* | Orellana et al. 2019 | *Cystoseira foeniculacea* |
| EU681401 | 1 | 1 + 2 | *Cystoseira tamariscifolia* | Silberfeld et al. 2010 | *Ericaria selaginoides compl.* haplogroup A |
| MF768050-52 | 3 | 1 | *Cystoseira amentacea var. stricta* | Bruno de Sousa et al. 2019 | *Ericaria selaginoides compl.* haplogroup A (caespitose) |
| MF768053-63 | 11 | 1 | *Cystoseira tamariscifolia* | Bruno de Sousa et al. 2019 | *Ericaria selaginoides compl.* haplogroup A |
| MF768064-65 | 2 | 1 | *Cystoseira mediterranea* | Bruno de Sousa et al. 2019 | *Ericaria selaginoides compl.* haplogroup B |
| MH513836 | 1 | 2 | *Cystoseira tamariscifolia* | Orellana et al. 2019 | *Ericaria selaginoides compl.* haplogroup A |
| MT978052 | 1 | 1 | *E. crinita f. bosphorica* | Sadogurska et al. 2020 | *Ericaria crinita* complex |
| MT978054 | 1 | 1 | *Ericaria crinita* | Sadogurska et al. 2020 | *Ericaria crinita* complex |
| MF768066-71 | 6 | 1 | *Cystoseira abies-marina* | Bruno de Sousa et al. 2019 | *Gongolaria abies-marina* |
| MH513830 | 1 | 2 | *Cystoseira abies-marina* | Orellana et al. 2019 | *Gongolaria abies-marina* |
| EU681399 | 1 | 1 + 2 | *Cystoseira baccata* | Silberfeld et al. 2010 | *Gongolaria baccata* |
| EU681400 | 1 | 1 + 2 | *Cystoseira nodicaulis* | Silberfeld et al. 2010 | *Gongolaria nodicaulis* |
| KY682970 | 1 | 1 | *Cystoseira barbata* | Rizzo et al. 2017 | *Gongolaria barbata* |
| MF768072 | 1 | 1 | *Cystoseira spinose* | Bruno de Sousa et al. 2019 | *Gongolaria montagnei* complex |
| MF768073 | 1 | 1 | *Cystoseira mauritanica* | Bruno de Sousa et al. 2019 | *Gongolaria gibraltarica* |
| MF768074 | 1 | 1 | *Cystoseira barbata f. repens* | Bruno de Sousa et al. 2019 | *Gongolaria gibraltarica f. lacunarum* |
| MF768075 | 1 | 1 | *Cystoseira barbata* | Bruno de Sousa et al. 2019 | *Gongolaria nodicaulis/gibraltarica?* |
| MF768076-77 | 2 | 1 | *Cystoseira nodicaulis* | Bruno de Sousa et al. 2019 | *Gongolaria nodicaulis* |
| MF768078-79 | 2 | 1 | *Cystoseira baccata* | Bruno de Sousa et al. 2019 | *Gongolaria baccata* |
| MF768080-83 | 4 | 1 | *Cystoseira usneoides* | Bruno de Sousa et al. 2019 | *Gongolaria usneoides* |
| MH513835 | 1 | 2 | *Cystoseira mauritanica* | Orellana et al. 2019 | *Gongolaria sp. 1* |
| MK370729 | 1 | 1 | *Treptacantha rayssiae* | Mulas et al. 2020 | *Gongolaria rayssiae* |
| MT978053 | 1 | 1 | *Gongolaria barbata* | Sadogurska et al. 2020 | *Gongolaria barbata* |
| KP136545 | 1 | 1 | *Cystoseira baccata* | unpublished | *Gongolaria barbata* |
| TOTAL | 64 |  |  |  |  |

**Supplementary Table S3.** Submitted Genbank sequences and data-sets (last four columns) used in the different analyses.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MOTU** | ***cox*1**  **sequences\*** | **Morphotype** | **Country: Site** | **VouchersΔ** | **Collector1** | **Map**  **MOTUs**  **(all lengths)** | **Diversity, jMOTU/**  **ABGD (1193 bp)** | **PTP/GMYC (1193 bp**  **& unique)** | **Phylogenies**  **(1193 bp, selected)** |
| Cystoseira  foeniculacea | OK480237 |  | Ireland: Galway | ALGU A 3921-23 | RB,MG | x |  |  |  |
| OK480238\* |  | Spain: Galicia | ALGU A 3924-26 | JN | x | x | x | x |
| OK480239 |  | x | x |  |  |
| OK480240 | f. formosensis | Portugal: Algarve, Ria Formosa | ALGU A 3928-30Δ | JN | x |  |  |  |
| OK480241 | x | x |  |  |
| OK480242 |  | Spain: Tarifa area | ALGU A 3931 | JN,RB | x |  |  |  |
| OK480243\* |  | Spain: Canary Isl, Tenerife | ALGU A 3934-36 | JN | x | x | x |  |
| OK480244 |  | x | x |  |  |
| OK480245 |  | Spain: Canary Isl, Gran Canaria | ALGU A 3937 | JV | x | x |  |  |
| OK480246 |  | Spain: Canary Isl, Lazarote |  | LB | x |  |  |  |
| OK480247\* |  | Spain: Baleares, Cabrera |  | EB | x | x | x |  |
| OK480248 |  | x | x |  |  |
| OK480249 | f. latiramosa | x | x |  |  |
| OK480250 | f. tenuiramosa | Spain: Baleares, Menorca | ALGU A 3938-40 | JN,CP | x |  |  |  |
| OK480251 |  | Greece: Crete | ALGU A 3943 | JN,RJ | x |  |  |  |
| OK480252 |  | x |  |  |  |
| Cystoseira  compressa s.s. | OK480253 |  | Spain: Canary Isl, Tenerife | ALGU A 3944-46 | JN | x | x | x |  |
| OK480254 |  | x |  |  |  |
| OK480255\* |  | Spain: Canary Isl, Gran Canaria | ALGU A 3947 | JV | x | x |  |  |
| OK480256 |  | Portugal: Algarve | ALGU A 3948 | JN | x | x |  |  |
| OK480257 |  | x | x |  |  |
| OK480258 |  | Spain: Tarifa area | ALGU A 3949 | JN,RB | x | x | x |  |
| OK480259 |  | Morocco: Kaa Asserasse |  | KE | x | x |  |  |
| OK480260 |  | Morocco: Nador Lagoon | ALGU A 3950 | JN | x | x |  |  |
| OK480261 |  | x | x |  |  |
| OK480262 |  | Spain: Almeria |  | JN | x |  |  |  |
| OK480263 |  | France: Banyuls |  | DF | x | x | x |  |
| OK480264 |  | x | x |  |  |
| OK480265\* |  | Spain: Baleares, Menorca | ALGU A 3952-53 | JN,CP | x | x |  | x |
| OK480266 |  | Italy: Sicily, Cefalu |  | PW | x | x | x |  |
| OK480267 |  | Malta |  | NM | x | x | x |  |
| OK480268 |  | Italy: Numana |  | RBU | x | x |  |  |
| OK480269 |  | x | x |  |  |
| OK480270 |  | Italy: Vasto |  | RBU | x | x |  |  |
| OK480271 |  | x | x |  |  |
| OK480272\* |  | Greece: Crete | ALGU A 3955-56 | JN,RJ | x | x |  |  |
| OK480273 |  | Israel: Haifa | IOLR-MM00640 | MM | x | x | x |  |
| Cystoseira  humilis s.s. | OK480274 |  | France: Brittany |  | EAS | x | x | x |  |
| OK480275 |  | x | x |  |  |
| OK480276 |  | Spain: Galicia | ALGU A 3957-58 | JN | x | x | x |  |
| OK480277 |  | x | x |  |  |
| OK480278\* |  | Portugal: Ericeira | ALGU A 3959 | JN | x | x | x |  |
| OK480279 |  | x | x |  |  |
| OK480280 |  | Portugal: SW Coast | ALGU A 3960 | EAS | x | x |  |  |
| OK480281 |  | x | x |  |  |
| OK480282 |  | Portugal: Algarve |  | JN | x | x |  | x |
| OK480283 |  | x | x |  |  |
| OK480284 |  | Spain: Tarifa area |  | JN | x | x |  |  |
| OK480285 |  | Morocco: El Jadida area | ALGU A 3961-67 | JN,EAS,BS | x |  |  |  |
| OK480286 |  | x | x |  |  |
| OK480287 |  | Morocco: Essaouira |  | EAS,GAP | x | x |  |  |
| OK480288 |  | x | x |  |  |
| OK480289 |  | Mauritania: Nouadhibou area |  | EAS | x |  |  |  |
|  | x |  |  |  |
| OK480291 |  | Portugal: Madeira | ALGU A 3968 | EN | x | x | x |  |
| OK480292 |  | Portugal: Madeira |  | CF | x | x |  |  |
| OK480293\* |  | Spain: Canary Isl, Lazarote |  | LB | x | x | x |  |
| OK480294 |  | x | x |  |  |
| OK480295 |  | Spain: Canary Isl, Fuerteventura |  | BB | x | x |  |  |
| OK480296 |  | Spain: Canary Isl, La Gomera |  | PW | x |  |  |  |
| OK480297 |  | x |  |  |  |
| OK480298\* |  | Spain: Canary Isl, Hierro |  | CV | x | x | x |  |
| OK480299 |  | x | x |  |  |
| OK480300 |  | Spain: Canary Isl, Gran Canaria |  | JV | x | x |  |  |
| OK480301\* |  | Spain: Canary Isl, Tenerife | ALGU A 3969-71 | CV | x | x | x |  |
| OK480302 |  | x | x |  |  |
| Cystoseira  pustulata | OK480303\* |  | Spain: Canary Isl, Gran Canaria |  | JV | x | x | x |  |
| OK480304 |  | Spain: Canary Isl, Lazarote |  | LB | x | x |  |  |
| OK480305 |  | Portugal: Azores, Formigas | ALGU A 3972-73 | DM,RT | x | x | x |  |
| OK480306 |  | Portugal: Azores, Santa Maria |  | RT | x | x | x |  |
| OK480307 |  | Portugal: Azores, Sao Miguel |  | EAS | x | x |  |  |
| OK480308 |  | x |  |  |  |
| OK480309 |  | Portugal: Azores, Faial |  | NS | x | x |  | x |
| OK480310 |  | x | x |  |  |
| OK480311 |  | Portugal: Azores, Pico |  | NS | x | x |  |  |
| OK480312 |  | x | x |  |  |
| OK480313 |  | x | x |  |  |
| OK480314 |  | Portugal: Azores, S. Jorge |  | NS | x | x |  |  |
| OK480315 |  | x | x |  |  |
| OK480316 |  | Portugal: Azores, Corvo |  | DM | x |  |  |  |
| OK480317 |  | Spain: Almeria |  | JN | x |  |  |  |
| OK480318 |  | Spain: Baleares, Menorca | ALGU A 3974-77 | JN,CP | x | x |  |  |
| OK480319 |  | Italy: Pantelleria | ALGU A 3979-80 | JN,CP | x |  |  |  |
| OK480320 |  | x |  |  |  |
| OK480321 |  | Malta |  | GS | x |  |  |  |
| OK480322 |  | Greece: Mykonos | ALGU A 3981 | NM | x | x | x |  |
| OK480323\* |  | Greece: Crete | ALGU A 3982-83 | JN,RJ | x | x |  |  |
| OK480324 |  | x | x |  |  |
| Ericaria  dubia | OK480325\* |  | Greece: Crete |  | JN,RJ | x | x | x | x |
| OK480326 |  | x | x |  |  |
| Ericaria  zosteroides | OK480327\* |  | Spain: Columbretes |  | EB | x | x | x |  |
| OK480328 |  | x | x |  |  |
| OK480329 |  | Spain: Catalonia, Medes | ALGU A 3984-86 | PC/AM | x | x | x | x |
| Ericaria  sedoides | OK480330\* |  | Italy: Pantelleria | ALGU A 3987 | JN,CP | x | x | x | x |
| OK480331 |  | x | x |  |  |
| Ericaria  selaginoides  haplogroup A | OK480332 | single cauloid | Ireland: Galway | ALGU A 3988 | RB | x | x | x |  |
| OK480333 | single cauloid | Spain: Galicia |  | IB | x | x | x |  |
| OK480334\* | single cauloid | Spain: Galicia | ALGU A 3989-90 | JN | x | x |  | x |
| OK480335 | single cauloid | x | x |  |  |
| OK480336 | single cauloid | Portugal: Ericeira |  | JN | x | x |  |  |
| OK480337 | single cauloid | x | x |  |  |
| OK480338 | single cauloid | Portugal: Algarve | ALGU A 3994 | JN | x | x |  |  |
| OK480339 | single cauloid | x | x |  |  |
| OK480340 | single cauloid | Spain: Tarifa area |  | JN,RB | x | x | x |  |
| OK480341 | single cauloid | x | x |  |  |
| OK480342 | single cauloid | Morocco: Kaa Asserasse |  | KE | x | x |  |  |
| OK480343 | single cauloid | x | x |  |  |
| OK480344 | single cauloid | Morocco: Nador Area | ALGU A 3995 | JN | x |  |  |  |
| OK480345 | single cauloid | Morocco: El jadida area | ALGU A 3996-99 | JN,EAS,BS | x | x |  |  |
| OK480346 | single cauloid | x | x |  |  |
| OK480347 | single cauloid | Morocco: Essaouira |  | EAS,GAP | x | x |  |  |
| OK480348 | single cauloid | x | x |  |  |
| OK480349 | single cauloid | Morocco: Tan-Tan Plage area |  |  | x |  |  |  |
| OK480350 | single cauloid | Portugal: Madeira | ALGU A 4000 | EN | x | x | x |  |
| OK480351 | single cauloid | x | x |  |  |
| OK480352 | single cauloid | Spain: Canary Isl, Gran Canaria | ALGU A 4001 | JV | x | x |  |  |
| OK480353 | single cauloid | Spain: Canary Isl, Lazarote |  | LB | x |  |  |  |
| OK480354 | single cauloid | Spain: Almeria | ALGU A 4002-4003 | JN,RB | x | x | x |  |
| OK480355 | single cauloid | x | x |  |  |
| OK480356\* | caespitose | Portugal: Azores, Santa Maria |  | PW,RT | x | x | x |  |
| OK480357 | caespitose | x |  |  |  |
| OK480358 | caespitose | x | x |  |  |
| OK480359 | caespitose | Portugal: Azores, Graciosa | ALGU A 4004-4006 | DM | x | x | x |  |
| OK480360 | caespitose | x | x |  |  |
| OK480361\* | caespitose | Spain: Almeria |  | JN,RB | x | x |  |  |
| OK480362 | caespitose | x | x |  |  |
| OK480363 | caespitose | Morocco: Nador Area | ALGU A 4007 | JN | x | x | x |  |
| OK480364 | caespitose | Spain: Alicante |  | RB | x | x |  |  |
| OK480365 | caespitose | x |  |  |  |
| OK480366 | caespitose | Spain: Columbretes |  | EB | x |  |  |  |
| OK480367 | caespitose | x | x |  |  |
| OK480368\* | caespitose | Spain: Baleares, Cabrera |  | EB | x | x |  |  |
| OK480369 | caespitose | x | x |  |  |
| OK480370 | caespitose | Spain: Baleares, Formentera |  | EB | x | x |  |  |
| OK480371 | caespitose | x | x |  |  |
| OK480372 | caespitose | Spain: Baleares, Maiorca |  | AE,MC | x | x | x |  |
| OK480373 | caespitose | x | x |  |  |
| OK480374\* | caespitose | Spain: Baleares, Menorca | ALGU A 4008-09 | JN,CP | x | x |  | x |
| OK480375 | caespitose | Italy: Pantelleria | ALGU A 4010-11 | JN,CP | x |  | x |  |
| OK480376 | caespitose | x | x |  |  |
| Ericaria  selaginoides  haplogroup B | OK480377 |  | Spain: Catalonia |  | AOB | x |  |  |  |
| OK480378\* |  | Spain: Catalonia |  | GFM | x | x | x |  |
| OK480379 |  | x | x |  |  |
| OK480380 |  | Spain: Catalonia, Medes | ALGU A 4012-14 | PC/AM | x | x | x | x |
| OK480381 |  | x | x |  |  |
| OK480382 |  | France: Marseille |  |  | x | x | x |  |
| OK480383\* |  | Italy: Sicily, Capo Millazo | ALGU A 4015-16 | JN,CP | x | x |  |  |
| OK480384 |  | x | x | x |  |
| OK480385 |  | Italy: Sicily |  | DS | x |  |  |  |
| OK480386 |  | x | x |  |  |
| Ericaria  selaginoides  haplogroup C | OK480387\* |  | Italy: Apulia, Tricase | ALGU A 4017 | EAS | x | x | x |  |
| OK480388 |  | Italy: Apulia, Mattinata |  | RBu | x | x |  |  |
| OK480389 |  | x | x |  |  |
| OK480390\* |  | Malta |  | NM | x | x | x |  |
| OK480391 |  | Greece: Crete | ALGU A 4018-20 | JN,RJ | x | x |  | x |
| OK480392 |  | x | x |  |  |
| Ericaria  balearica | OK480393\* |  | Spain: Columbretes |  | EB | x | x | x |  |
| OK480394 |  | x | x |  |  |
| OK480395 |  | Spain: Baleares, Cabrera |  | EB | x | x |  |  |
| OK480396 |  | x |  | x |  |
| OK480397 |  | Spain: Baleares, Formentera |  | EB | x | x |  |  |
| OK480398 |  | x |  | x |  |
| OK480399\* |  | Spain: Baleares, Menorca | ALGU A 4021-24 | JN,CP | x | x |  | x |
| OK480400 |  | Italy: Pantelleria | ALGU A 4025 | JN,CP | x |  |  |  |
| Ericaria  brachycarpa s.s. | OK480401\* |  | Greece: Crete | ALGU A 4028-29 | JN,RJ | x | x | x | x |
| OK480402 |  | x | x |  |  |
| OK480403\* |  | Italy: Sicily, Cefalu |  | PW | x | x | x | x |
| OK480404 |  | x | x |  |  |
| OK480405 |  | Italy: Sicily, Capo Millazo | ALGU A 4026-27 | JN,CP | x | x |  |  |
| Ericaria  corniculata | OK480406\* |  | Greece: Crete | ALGU A 4030 | JN,RJ | x | x | x | x |
| OK480407\* |  | x | x | x |  |
| Ericaria  crinita  complex | OK480408\* | "crinita" | Spain: Baleares, Menorca | ALGU A 4031-34 | JN,CP | x | x | x |  |
| OK480409 | "crinita" | x | x |  | x |
| OK480410 | "crinita" | Italy: Sicily, Capo Millazo | ALGU A 4035-36 | JN,CP | x | x | x |  |
| OK480411 |  | Malta |  | GS | x |  |  |  |
| OK480412 |  | Malta |  | NM | x | x |  |  |
| OK480413 |  | x |  |  |  |
| OK480414 |  | Greece: Mykonos | ALGU A 4038 | NM | x |  |  |  |
| OK480415 | "crinita" | Greece: Crete | ALGU A 4039-46 | JN,RJ | x | x | x |  |
| OK480416 | "crinita" | x | x |  |  |
| OK480417 | "crinita" | x |  |  |  |
| OK480418 | "crinita" | x |  |  |  |
| OK480419 | "barbatula" | Italy: Pantelleria | ALGU A 4047-48 | JN,CP | x | x |  |  |
| OK480420 | "barbatula" | Greece: Crete | ALGU A 4049-52 | JN,RJ | x |  |  | x |
| OK480421\* | "barbatula" | x | x |  |  |
| OK480422\* | "giacconei" | Italy: Sicily, Isola del Corrente | CAT 2717-2718 | DS | x | x | x |  |
| OK480423 | "giacconei" | x | x |  |  |
| Gongolaria  sonderi | OK480424 |  | Cape Verde: São Vicente | ALGU A 4053 | JS | x | x | x |  |
| OK480425\* |  | Cape Verde: Santiago |  | EAS | x | x |  | x |
| OK480426 |  | x |  |  |  |
| Gongolaria  abies-marina | OK480427 |  | Spain: Canary Isl, Lazarote |  | LB | x | x | x |  |
| OK480428 |  | Spain: Canary Isl, Gran Canaria | ALGU A 4054 | JV | x | x | x |  |
| OK480429 |  | Portugal: Azores, Formigas | ALGU A 4058-59 | DM,RT | x | x | x |  |
| OK480430 |  | Portugal: Azores, Santa Maria |  | PW | x | x |  |  |
| OK480431 |  | x | x | x |  |
| OK480432\* |  | Portugal: Azores, Sao Miguel |  | EAS | x | x | x |  |
| OK480433 |  | x | x |  |  |
| OK480434 |  | Portugal: Azores, Graciosa | ALGU A 4060-64 | DM | x | x |  |  |
| OK480435 |  | x | x |  |  |
| OK480436 |  | Portugal: Azores, Terceira |  | NS | x | x |  |  |
| OK480437 |  | Portugal: Azores, Faial |  | NS | x | x |  | x |
| Gongolaria  barbata | OK480438 |  | Spain: Baleares, Menorca | ALGU A 4065-70 | JN,CP | x |  | x |  |
| OK480439\* |  | x | x |  | x |
| "Gongolaria  susanensis" | OK480440\* |  | Italy: Sicily, Marzameni | ALGU A 4071 | JN,CP | x | x | x |  |
| Gongolaria  baccata | OK480441 |  | Ireland: Donegal | ALGU A 4072-73 | JN,FF | x |  |  |  |
| OK480442\* |  | France: Brittany |  | JN,FF | x | x | x |  |
| OK480443 |  | Spain: Cantabria |  | JN,FF | x | x |  |  |
| OK480444 |  | Spain: Galicia | ALGU A 4074-75 | JN | x | x |  | x |
| OK480445 |  | x | x |  |  |
| OK480446 |  | Portugal: Ericeira |  | JN | x | x |  |  |
| OK480447 |  | x | x |  |  |
| OK480448 |  | Morocco: El Jadida area | ALGU A 4076-77 | JN,EAS,BS | x |  |  |  |
| OK480449 |  | x | x | x |  |
| OK480450 |  | Morocco: Essaouira |  | EAS,GAP | x | x |  |  |
| OK480451 |  | x | x |  |  |
| Gongolaria  usneoides | OK480452 |  | Spain: Galicia |  | IB | x | x | x |  |
| OK480453 |  | Spain: Galicia |  | JN | x | x |  |  |
| OK480454 |  | Portugal: SW Coast | ALGU A 4078-79 | JN | x |  |  | x |
| OK480455\* |  | Portugal: Algarve |  | FF | x | x | x |  |
| OK480456 |  | x | x |  |  |
| OK480457 |  | x | x |  |  |
| OK480458 |  | Portugal: Algarve | ALGU A 4080-81 | EAS | x | x |  |  |
| OK480459 |  | x | x |  |  |
| OK480460 |  | Morocco: Kaa Asserasse |  | KE | x | x |  |  |
| Gongolaria  sp. 1 | OK480461 |  | Spain: Baleares, Formentera |  | EB | x | x | x |  |
| OK480462 |  | x | x |  |  |
| OK480463\* | "Madeira-type" | Portugal: Madeira | ALGU A 4082-84 | EN | x | x |  | x |
| OK480464 | "Madeira-type" | x | x |  |  |
| OK480465\* | "Canary-type" | Spain: Canary Isl, Tenerife | ALGU A 4085-89 | JN | x | x | x | x |
| OK480466 | "Canary-type" | x | x |  |  |
| Gongolaria  rayssiae | OK480467 |  | Israel: Haifa | ALGU A 4090-91 | MM | x |  |  |  |
| OK480468\* |  | x | x | x | x |
| Gongolaria  sp. 2 | OK480469 |  | Italy: Sicily, Capo Millazo | ALGU A 4092-94 | JN,CP | x | x | x |  |
| OK480470\* |  | x | x | x |  |
| OK480471 |  | x |  |  |  |
| OK480472 |  | Italy: Sicily, Marzameni |  | JN,CP | x |  |  |  |
| OK480473 |  | Italy: Capo Passero | ALGU A 4095 | JN,CP | x |  |  |  |
| OK480474 |  | Greece: Crete | ALGU A 4096-03 | JN,RJ | x | x |  | x |
| OK480475 |  | x | x |  |  |
| OK480476 |  | x | x |  | x |
| OK480477 |  | x | x |  |  |
| Gongolaria  nodicaulis | OK480478\* |  | Ireland: Galway | ALGU A 4104-06 | RB | x | x | x |  |
| OK480479 |  | Spain: Galicia |  | JN | x | x |  | x |
| OK480480 |  | x | x |  |  |
| OK480481 |  | Morocco: El Jadida area | ALGU A 4107-11 | JN,EAS,BS | x | x |  |  |
| OK480482 |  | Mauritania: Nouadhibou area |  | EAS | x |  |  |  |
| OK480483 |  | Mauritania: Banc D'Arguin |  | EAS | x |  |  |  |
| OK480484 |  | Mauritania: Teichott | ALGU A 4114-17 | EAS | x | x | x |  |
| OK480485 |  | x | x |  |  |
| Gongolaria  gibraltarica | OK480486 | f. lacunarum | Portugal: Algarve, Ria Formosa | ALGU A 4118-21 Δ | JN | x | x | x |  |
| OK480487 | f. lacunarum | Spain: Andaluzia, Cádiz Lagoon | ALGU A 4122-23 | JN,RB | x | x |  |  |
| OK480488 | f. lacunarum | x | x |  |  |
| OK480489 | f. lacunarum | Morocco: Nador Lagoon | ALGU A 4124-26 | JN | x |  |  |  |
| OK480490 | f. lacunarum | x | x |  |  |
| OK480491\* |  | Spain: Tarifa area |  | JN | x | x |  | x |
| OK480492 |  | Spain: Tarifa area | ALGU A 4127 | JN,RB | x | x | x |  |
| OK480493 |  | x | x |  |  |
| OK480494 |  | Morocco: Nador Area | ALGU A 4128-37 | JN | x | x |  |  |
| OK480495 |  | x |  |  |  |
| OK480496 |  | x | x |  |  |
| OK480497 |  | x | x |  |  |
| OK480498 |  | x | x |  |  |
| Gongolaria  elegans  complex | OK480499 | "sauvageauana" | Spain: Columbretes |  | EB | x | x | x | x |
| OK480500 | "sauvageauana" | x | x |  |  |
| OK480501 |  | Spain: Catalonia | ALGU A 4138-39 | AM | x | x |  |  |
| OK480502 |  | x | x |  |  |
| OK480503\* | deep-water | Spain: Catalonia, Medes | ALGU A 4143-45 | PC/AM | x | x |  | x |
| OK480504 | deep-water | x | x |  |  |
| OK480505 | shallow-water | Spain: Catalonia | ALGU A 4140-42 | AM | x | x |  | x |
| OK480506 | shallow-water | x | x |  |  |
| OK480507 | shallow-water | Spain: Almeria | ALGU A 4146-49 | JN | x |  | x |  |
| OK480508 | shallow-water | x | x |  |  |
| Gongolaria  montagnei  complex | OK480509 |  | Spain: Almeria | ALGU A 4150 | JN | x |  |  |  |
| OK480510\* |  | Spain: Alicante |  | RB | x | x | x |  |
| OK480511 |  | Spain: Columbretes |  | EB | x | x | x |  |
| OK480512 |  | x | x |  |  |
| OK480513 |  | Spain: Baleares, Cabrera |  | EB | x | x | x |  |
| OK480514 |  | x | x |  |  |
| OK480515 |  | x | x |  |  |
| OK480516 |  | x | x |  |  |
| OK480517 |  | Spain: Baleares, Maiorca |  | AE,MC | x |  |  |  |
| OK480518 |  | x | x |  |  |
| OK480519 |  | x | x | x |  |
| OK480520 |  | x |  |  |  |
| OK480521\* |  | Spain: Baleares, Menorca | ALGU A 4151-55 | JN,CP | x | x |  | x |
| OK480522 |  | x | x |  |  |
| OK480523 |  | x |  |  |  |
| OK480524 |  | x |  |  |  |
| Bifurcaria  bifurcata | OK480525 |  | Spain: Galicia |  | JN | x |  |  | x |
| Stephanocystis  sp. 1 | OK480526 |  | USA: Davenport, California |  | EAS | x |  |  | x |
| Stephanocystis  sp. 2 | OK480527 |  | Canada: Vancouver Island |  | EAS | x |  |  | x |
| **TOTAL2** | **C88,E99,G101,**  **O3** |  |  |  |  | **C88,E99,G101** | **C68,E81,G82** | **C20,E31,G27** | **C4,E13,G16,**  **O3** |

\* Representative sequences; Δ Holotypes;

1 AE: Aschwin Engelen, AM: Alba Medrano; AOB: Alberto Ortiz Butrón; BB: Buga Bergovic; BS: Brahim Sabour; CF: Cátia Freitas; CP: Cristina Paulino; CV: Christophe Vieira; DF: Duarte Frade; DM: David Milla; DS: Donatella Serio; EAS: Ester A Serrão; EB: Enrique Ballesteros; EN: Eduardo Nóbrega; FF: Francisco Fernandes; GAP: Gareth A Pearson; GFM: Gina de la Fuente Mancebo; GS: Gonçalo Silva; IG: Ignacio Barbara; JN: João Neiva; JS: João Soares; JV: José Valdazo; KE: Karim Erzini; LB: Luis Barreto; MC: Márcio Coelho; MG: Micheal Guiry; MM: Martina Mulas; NM: Neusa Martins; NS: Nuri Steinmann; PC: Pol Capdevilla; PW: Peter Wirtz; RB: Ricardo Bermejo; RBU: Roberto Buonomo; RJ: Rita Jacinto; RT: Raquel Torres.

2 C: *Cystoseira* s.s.; E: *Ericaria*; G: *Gongolaria*; O: outgroups