

**Figure S1.** Preliminary Bayesian ITS tree of all 20 *Fusarium* isolated from *P. unifilis* eggshells, with *Neonectria* as outgroup. Species names are followed by herbarium codes and GenBank accession numbers. Sequences obtained here are in bold. Type strains are marked with a "T". An interrupted branch (//) indicates its length has been reduced. Numbers above and below the branches represent Bayesian posterior probability (PP) and maximum likelihood bootstrap values (BS), respectively (shown only if PP ≥ 0.90 and BS ≥ 50%). Solid dots indicate full support in both analyses. Species complexes are indicated in the right side of the figure (lines are discontinuous if recovered as non-monophyletic). The scale bar represents the average number of substitutions per site.

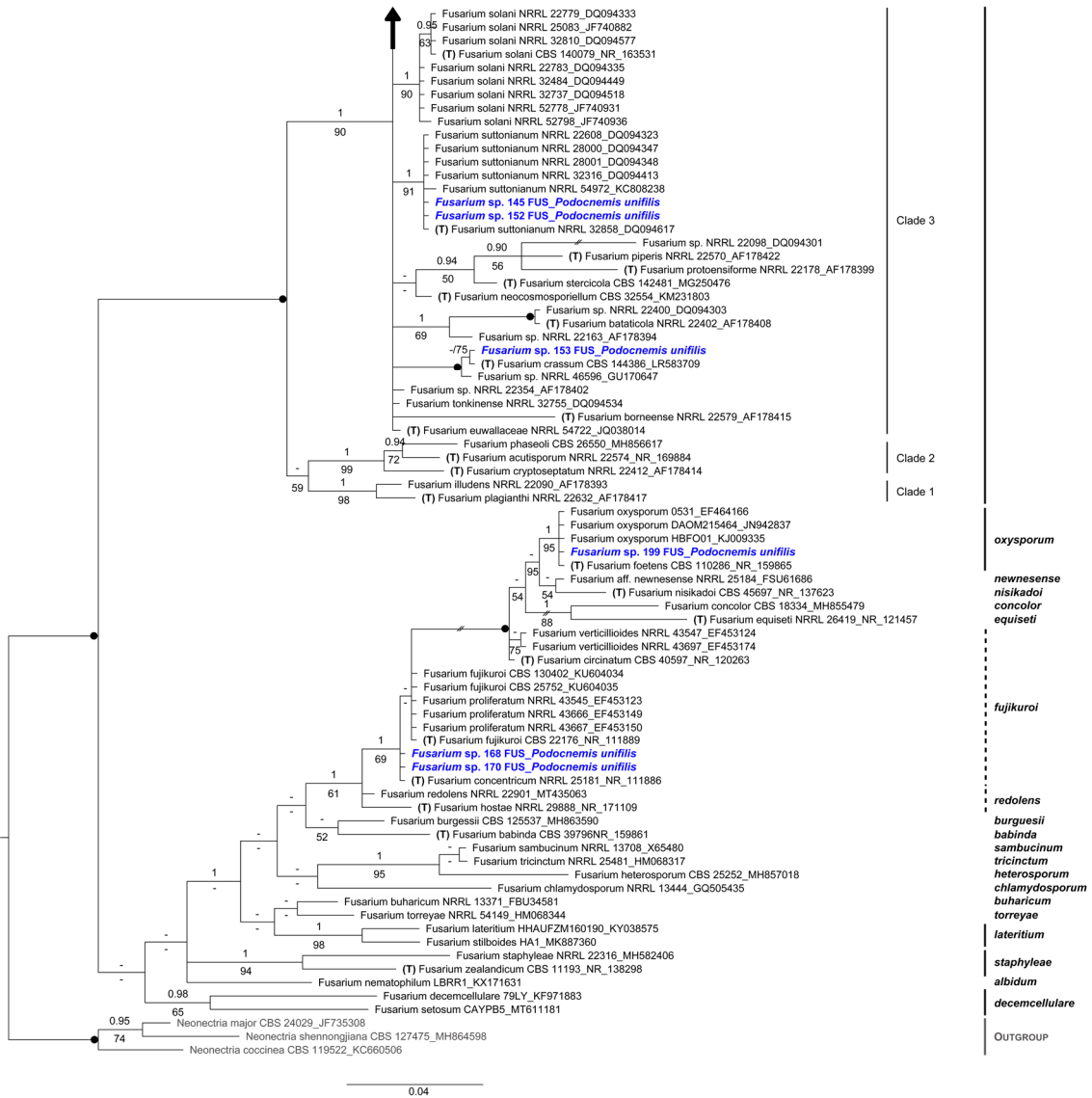
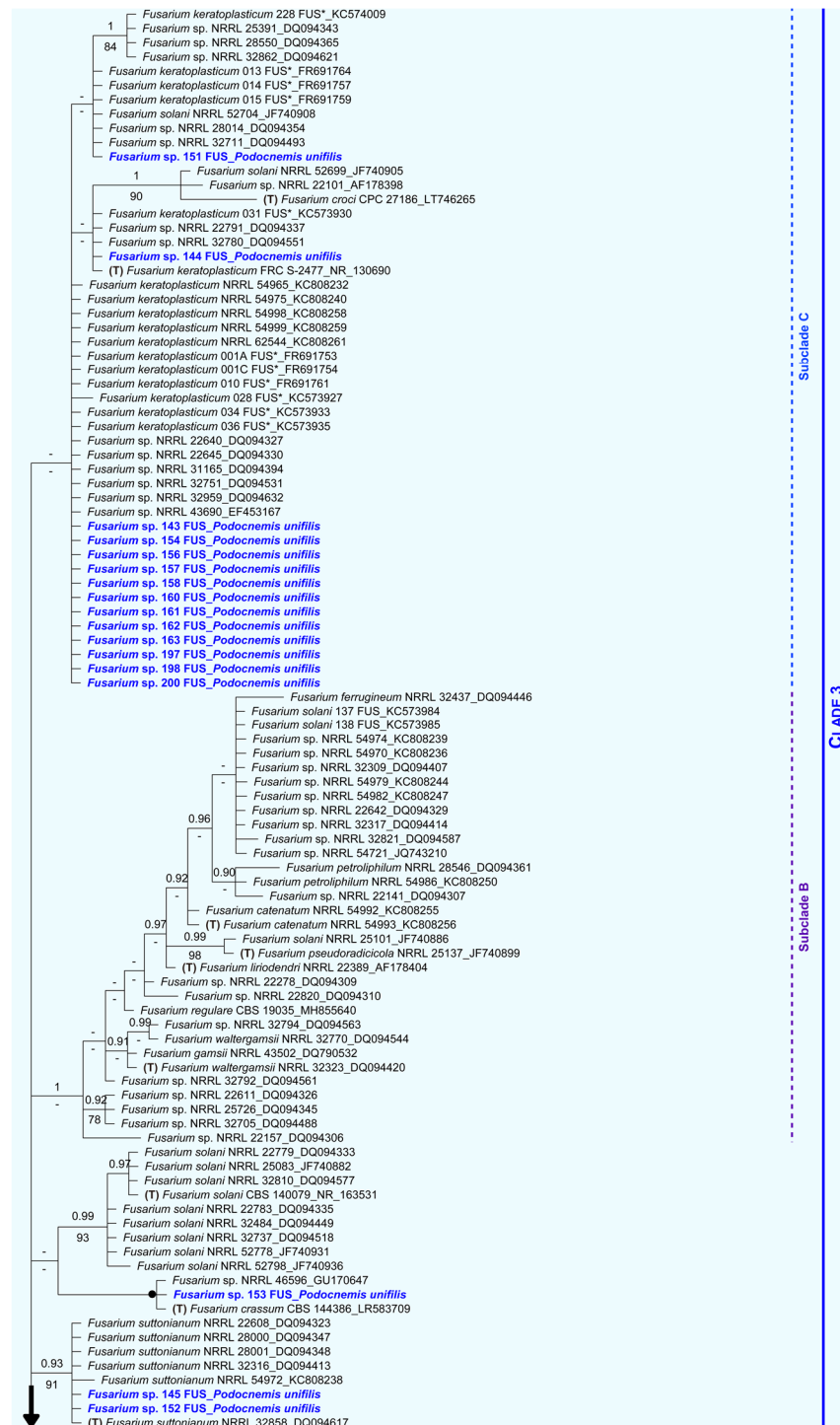


Figure S1. (Continuation).



**Figure S2.** Bayesian ITS tree of FSSC isolates, based on 499 nucleotides, with members of the FSSC Clade 1 as outgroup. Species names are followed by herbarium codes and GenBank accession numbers. Sequences obtained here are in bold. Type strains are marked with a "T". Specimens corresponding to *F. keratoplasticum*, initially identified as *F. solani*, are marked with an asterisk. Clades 1, 2 and 3 represent designations proposed by O'Donnell et al. [57]. Subclades B and C follow Sarmiento-Ramírez et al. [28]. Numbers above and below the branches represent Bayesian posterior probability (PP) and maximum likelihood bootstrap values (BS), respectively (shown only if PP  $\geq 0.90$  and BS  $\geq 50\%$ ). Solid dots indicate full support in both analyses. The scale bar represents the average number of substitutions per site.

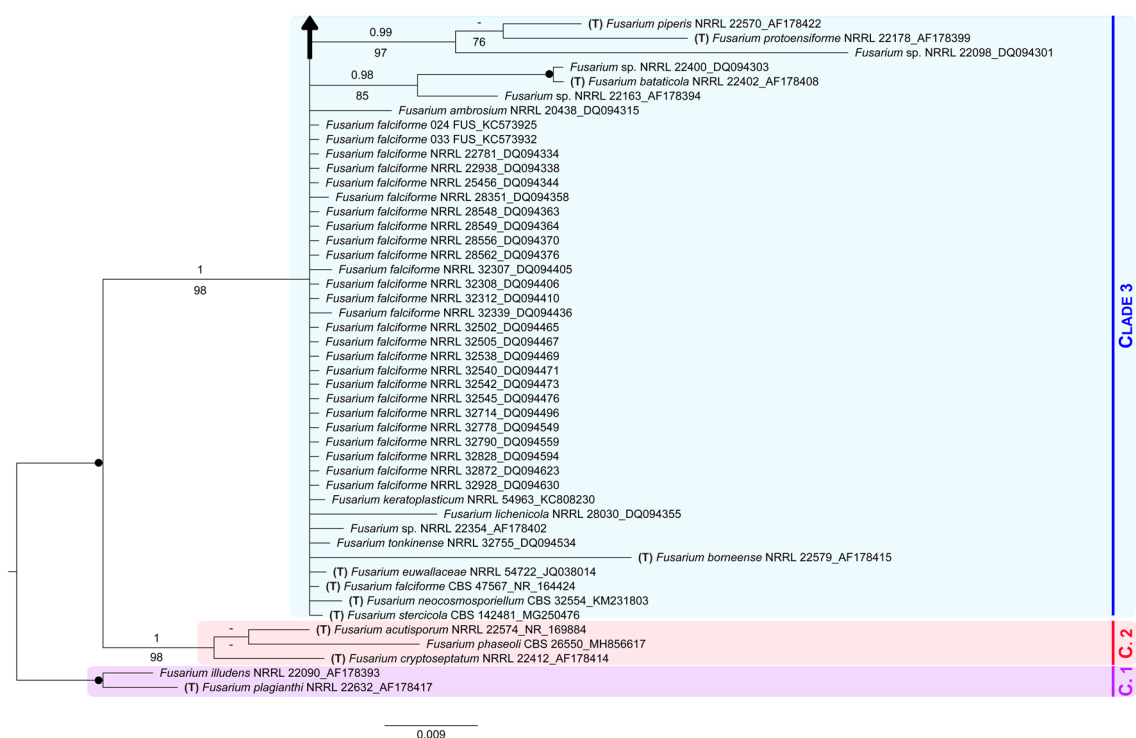
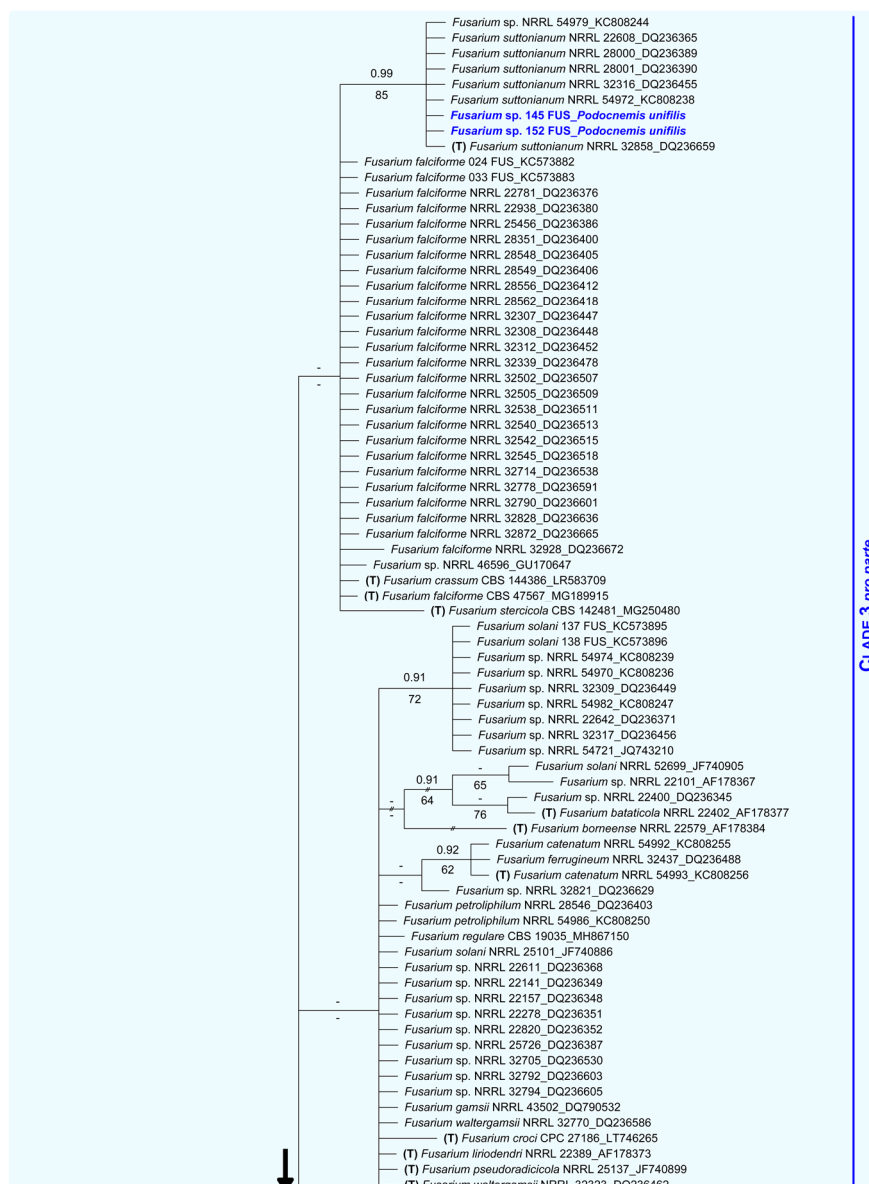


Figure S2. (Continuation).



**Figure S3.** Bayesian LSU tree of FSSC isolates, based on 520 nucleotides, with members of the FSSC Clade 1 as outgroup. Species names are followed by herbarium codes and GenBank accession numbers. Sequences obtained here are in bold. Type strains are marked with a "T". Specimens corresponding to *F. keratoplasticum*, initially identified as *F. solani*, are marked with an asterisk. Clades 1, 2 and 3 represent designations proposed by O'Donnell et al. [57]. Numbers above and below the branches represent Bayesian posterior probability (PP) and maximum likelihood bootstrap values (BS), respectively (shown only if PP ≥ 0.90 and BS ≥ 50%). An interrupted branch (//) indicates its length has been reduced for representation purposes. The scale bar represents the average number of substitutions per site.

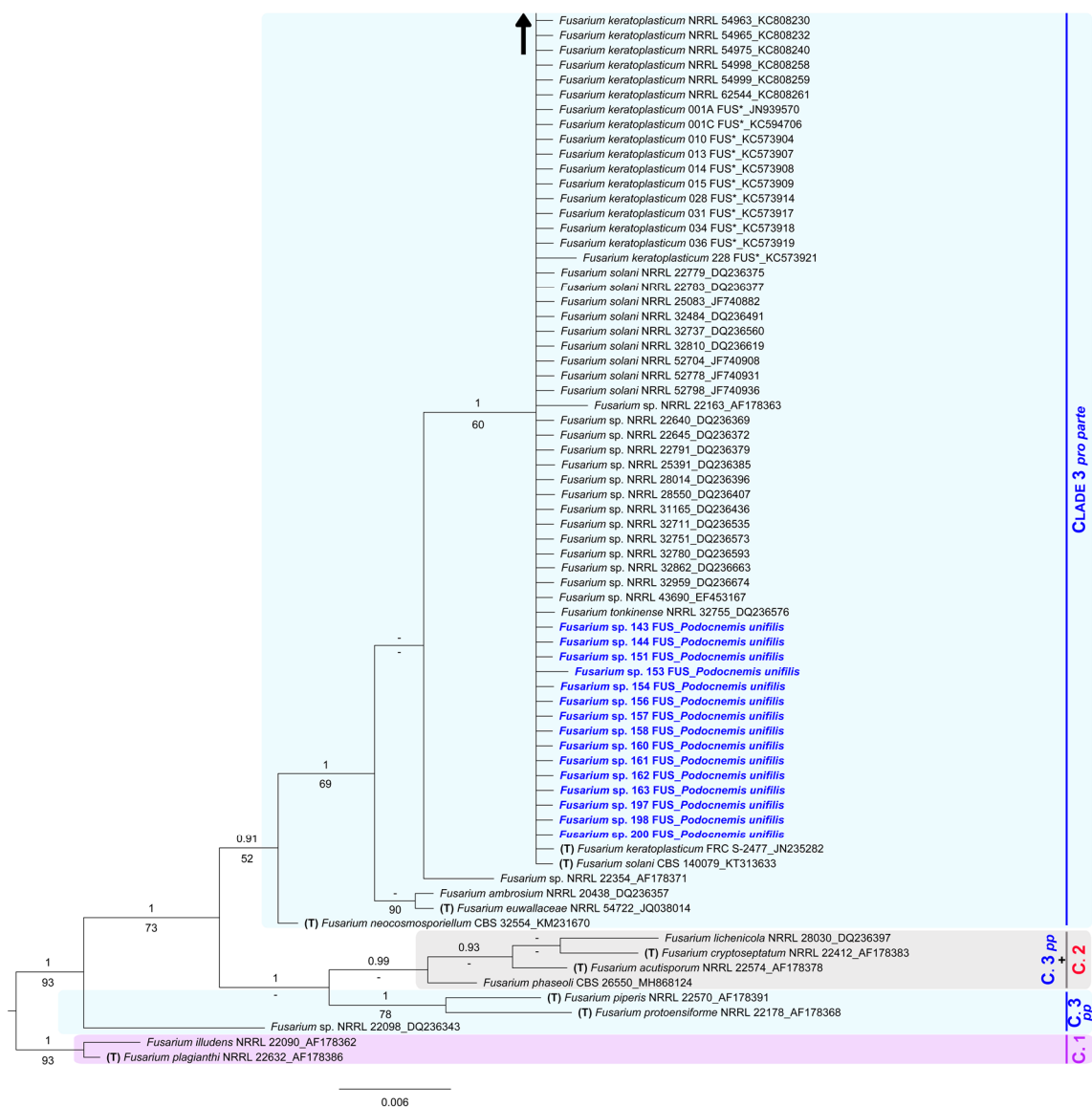
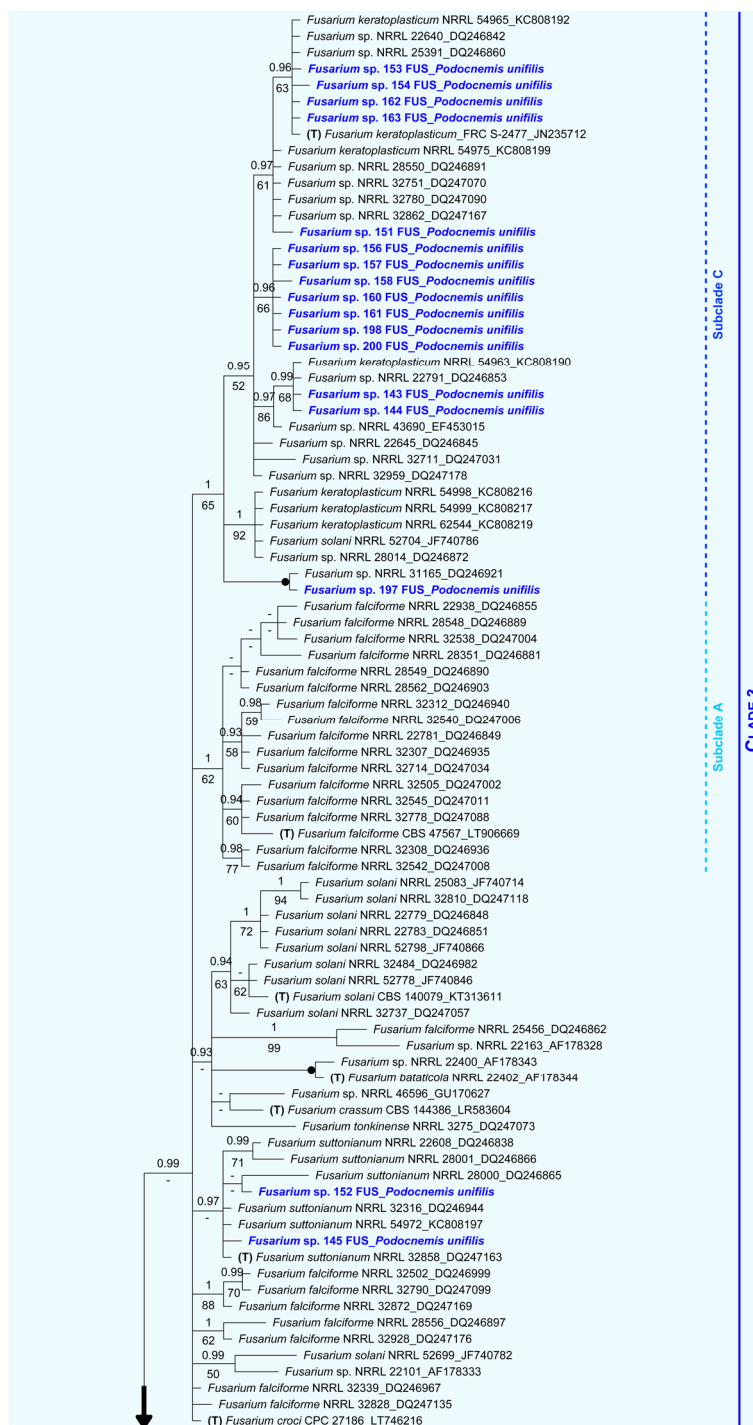


Figure S3. (Continuation).





**Figure S4.** Bayesian EF-1 $\alpha$  tree of FSSC isolates, based on 713 nucleotides, with members of the FSSC Clade 1 as outgroup. Species names are followed by herbarium codes and GenBank accession number. Sequences obtained here are in bold. Type strains are marked with a "T". Clades 1, 2 and 3 represent designations proposed by O'Donnell et al. [57]. Subclades A, B and C follow Sarmiento-Ramírez et al. [28]. Numbers above and below the branches represent Bayesian posterior probability (PP) and maximum likelihood bootstrap values (BS), respectively (shown only if PP  $\geq$  0.90 and BS  $\geq$  50%). Solid dots indicate full support in both analyses. The scale bar represents the average number of substitutions per site.

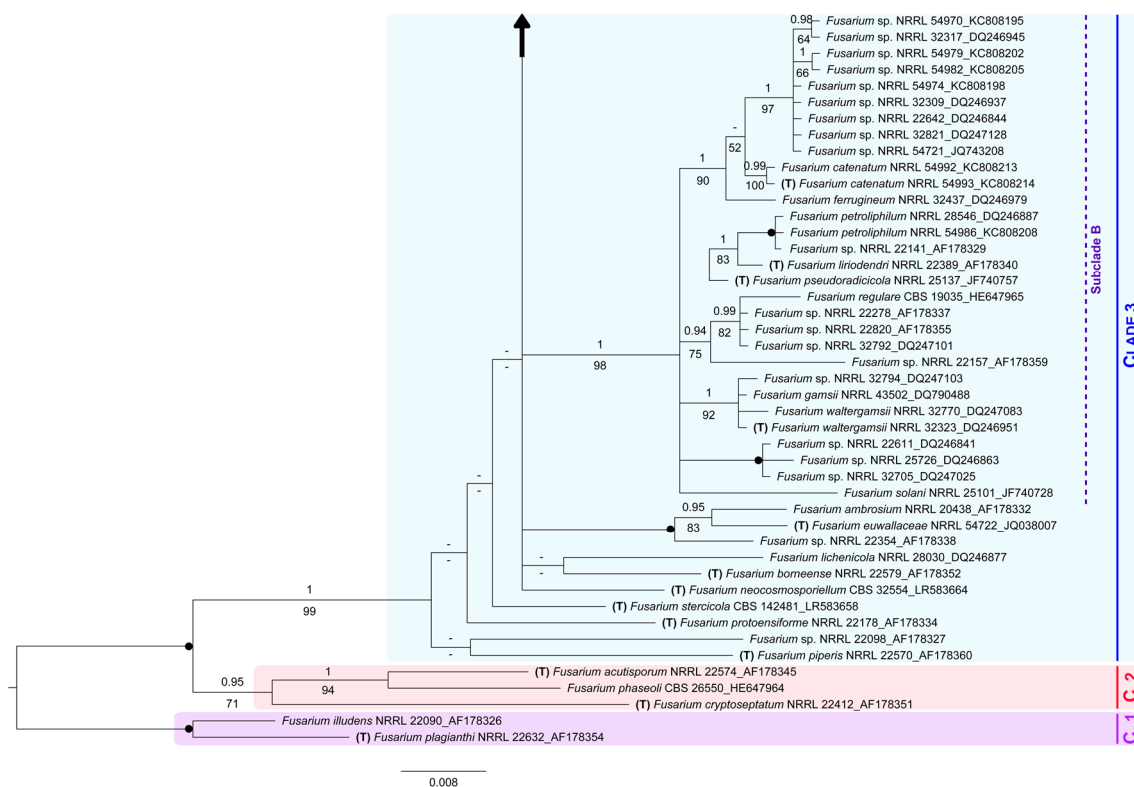


Figure S4. (Continuation).



**Table S1.** Fungal isolates obtained from *P. unifilis* eggshells, and putative identity based on ITS data.

| Isolate              | Geographic origin | Putative species name                    | ITS GenBank Accession No. | Identity | Seq. newly generated |
|----------------------|-------------------|--|---------------------------|----------|----------------------|
| 143 FUS <sup>b</sup> | Guiyero           | <i>Fusarium solani</i>                   | MT447548                  | 100%     | MW390926             |
|                      |                   | <i>Fusarium keratoplasticum</i>          | MN907495                  | 100%     |                      |
| 144 FUS <sup>b</sup> | Guiyero           | <i>Trichoderma pubescens</i> *           | MN644760                  | 100%     | MW390927             |
|                      |                   | Undetermined fungal sp.                  | KY7760381                 | 100%     |                      |
|                      |                   | <i>Fusarium</i> sp.                      | KU9507271                 | 100%     |                      |
|                      |                   | <i>Fusarium keratoplasticum</i>          | KP132216                  | 100%     |                      |
| 145 FUS <sup>b</sup> | Guiyero           | <i>Fusarium falciforme</i>               | MT114705                  | 100%     | MW390928             |
|                      |                   | <i>Fusarium solani</i>                   | MH7290211                 | 100%     |                      |
|                      |                   | Uncultured fungus clone                  | KF0602101                 | 100%     |                      |
| 146 FUS <sup>a</sup> | Guiyero           | <i>Rhizopus microsporus</i>              | MT279280                  | 100%     | MW390929             |
| 151 FUS <sup>b</sup> | Guiyero           | Uncultured fungus clone                  | MF510685                  | 100%     | MW390930             |
|                      |                   | <i>Fusarium</i> sp.                      | KX953611                  | 100%     |                      |
|                      |                   | <i>Fusarium solani</i>                   | KY484924                  | 100%     |                      |
| 152 FUS <sup>b</sup> | Nueva Providencia | <i>Fusarium falciforme</i>               | MT114705                  | 100%     | MW390931             |
|                      |                   | <i>Fusarium solani</i>                   | MH729021                  | 100%     |                      |
|                      |                   | <i>Fusarium</i> sp.                      | JQ364977                  | 100%     |                      |
| 153 FUS <sup>b</sup> | Sani Isla         | <i>Fusarium solani</i>                   | KT441029                  | 100%     | MW390932             |
|                      |                   | <i>Fusarium</i> sp.                      | EF687945                  | 100%     |                      |
| 154 FUS <sup>b</sup> | Sani Isla         | <i>Fusarium solani</i>                   | MT447548                  | 100%     | MW390933             |
|                      |                   | <i>Fusarium keratoplasticum</i>          | MN907486                  | 100%     |                      |
|                      |                   | <i>Fusarium</i> sp.                      | MH681596                  | 100%     |                      |
|                      |                   | Uncultured fungus clone                  | MF510804                  | 100%     |                      |
|                      |                   | <i>Nectria haematococca</i> <sup>c</sup> | KF679815                  | 100%     |                      |
| 155 FUS              | Sani Isla         | Chaetomiaceae sp.                        | MT530063                  | 100%     | MW390934             |
|                      |                   | <i>Chaetomium homophilatum</i>           | MT035919                  | 100%     |                      |
|                      |                   | <i>Hemicola fuscoatra</i>                | MG774450                  | 100%     |                      |
|                      |                   | Uncultured soil fungus                   | EU826907                  | 100%     |                      |
| 156 FUS <sup>b</sup> | Sani Isla         | <i>Fusarium solani</i>                   | MT447548                  | 100%     | MW390935             |
|                      |                   | <i>Fusarium keratoplasticum</i>          | MN907486                  | 100%     |                      |
|                      |                   | <i>Fusarium</i> sp.                      | MH681596                  | 100%     |                      |
|                      |                   | Uncultured fungus clone                  | MF510804                  | 100%     |                      |
|                      |                   | <i>Nectria haematococca</i> <sup>c</sup> | KF679815                  | 100%     |                      |
| 157 FUS <sup>b</sup> | Sani Isla         | <i>Fusarium solani</i>                   | MT447548                  | 100%     | MW390936             |
|                      |                   | <i>Fusarium keratoplasticum</i>          | MN907486                  | 100%     |                      |
|                      |                   | <i>Fusarium</i> sp.                      | MH681596                  | 100%     |                      |
|                      |                   | Uncultured fungus clone                  | MF510804                  | 100%     |                      |
|                      |                   | <i>Nectria haematococca</i> <sup>c</sup> | KF679815                  | 100%     |                      |
| 158 FUS <sup>b</sup> | Undetermined      | <i>Fusarium solani</i>                   | MT447548                  | 100%     | MW390937             |
|                      |                   | <i>Fusarium keratoplasticum</i>          | MN907486                  | 100%     |                      |
|                      |                   | <i>Fusarium</i> sp.                      | MH681596                  | 100%     |                      |
|                      |                   | Uncultured fungus clone                  | MF510804                  | 100%     |                      |
|                      |                   | <i>Nectria haematococca</i> <sup>c</sup> | KF679815                  | 100%     |                      |
| 159 FUS              | Undetermined      | <i>Ectophoma pomi</i>                    | MT112289                  | 99.80%   | MW390938             |
|                      |                   | <i>Phoma pereupyrena</i> <sup>d</sup>    | KJ767076                  | 99.80%   |                      |
|                      |                   | <i>Paraphoma radicina</i> <sup>e</sup>   | MH425313                  | 99.80%   |                      |
| 160 FUS <sup>b</sup> | Undetermined      | <i>Fusarium solani</i>                   | MT447548                  | 100%     | MW390939             |
|                      |                   | <i>Fusarium keratoplasticum</i>          | MN907486                  | 100%     |                      |
|                      |                   | <i>Fusarium</i> sp.                      | MH681596                  | 100%     |                      |
|                      |                   | Uncultured fungus clone                  | MF510804                  | 100%     |                      |
|                      |                   | <i>Nectria haematococca</i>              | KF679815                  | 100%     |                      |

<sup>a</sup>Isolates identified at species level (maximum sequence similarity with GenBank sequences representing a single species). <sup>b</sup>Isolates selected for phylogenetic analyses. <sup>c</sup>Teleomorph of *Fusarium solani*. <sup>d</sup>Synonym of *Ectophoma pomi*. <sup>e</sup>Previously named as *Phoma radicina*. <sup>f</sup>Teleomorph of *Fusarium verticillioides*. \*Wrong identification (based on BLAST searches, all the most similar sequences to this one correspond to *Fusarium* sp.).

Table S1. (Continuation).

|                      |                   |   |           |        |          |
|----------------------|-------------------|---|-----------|--------|----------|
| 161 FUS <sup>b</sup> | Undetermined      | <i>Fusarium solani</i>                      | MT447548  | 100%   | MW390940 |
|                      |                   | <i>Fusarium keratoplasticum</i>             | MN907495  | 100%   |          |
|                      |                   | <i>Fusarium</i> sp.                         | MH681596  | 100%   |          |
|                      |                   | Uncultured fungus clone                     | MF510804  | 100%   |          |
|                      |                   | <i>Nectria haematococca</i> <sup>c</sup>    | KF679815  | 100%   |          |
| 162 FUS <sup>b</sup> | Undetermined      | <i>Fusarium solani</i>                      | MT447548  | 100%   | MW390941 |
|                      |                   | <i>Fusarium keratoplasticum</i>             | MN907495  | 100%   |          |
|                      |                   | <i>Fusarium</i> sp.                         | MH681596  | 100%   |          |
|                      |                   | Uncultured fungus clone                     | MF510804  | 100%   |          |
|                      |                   | <i>Nectria haematococca</i>                 | KF679815  | 100%   |          |
| 163 FUS <sup>b</sup> | Undetermined      | <i>Fusarium solani</i>                      | MT447548  | 100%   | MW390942 |
|                      |                   | <i>Fusarium keratoplasticum</i>             | MN907486  | 100%   |          |
|                      |                   | <i>Fusarium</i> sp.                         | MH681596  | 100%   |          |
|                      |                   | Uncultured fungus clone                     | MF510804  | 100%   |          |
|                      |                   | <i>Nectria haematococca</i>                 | KF679815  | 100%   |          |
| 164 FUS              | Undetermined      | <i>Penicillium expansum</i>                 | MT582774  | 100%   | MW390943 |
|                      |                   | <i>Penicillium crustosum</i>                | MT582770  | 100%   |          |
|                      |                   | <i>Penicillium commune</i>                  | MN371392  | 100%   |          |
|                      |                   | <i>Penicillium christenseniae</i>           | MK267452  | 100%   |          |
|                      |                   | <i>Penicillium cyclopium</i>                | MH865559  | 100%   |          |
| 165 FUS <sup>c</sup> | Undetermined      | <i>Rhizopus microsporus</i>                 | MT279280  | 100%   | MW390944 |
| 166 FUS <sup>c</sup> | Undetermined      | <i>Rhizopus microsporus</i>                 | MT279280  | 100%   | MW390945 |
| 168 FUS              | Undetermined      | <i>Fusarium redolens</i>                    | MT563395  | 100%   | MW390946 |
|                      |                   | <i>Fusarium proliferatum</i>                | MT541890  | 100%   |          |
|                      |                   | <i>Fusarium concentricum</i>                | MN341308  | 100%   |          |
|                      |                   | <i>Fusarium oxysporum</i>                   | MN856435  | 100%   |          |
|                      |                   | <i>Fusarium solani</i>                      | MN486565  | 100%   |          |
|                      |                   | <i>Fusarium verticillioides</i>             | MH087117  | 100%   |          |
|                      |                   | <i>Fusarium fujikuroi</i>                   | KP998524  | 100%   |          |
|                      |                   | <i>Gibberella moniliformis</i> <sup>f</sup> | IX914478  | 100%   |          |
| 170 FUS              | Undetermined      | <i>Fusarium redolens</i>                    | MT563395  | 99.81% | MW390947 |
|                      |                   | <i>Fusarium proliferatum</i>                | MT541890  | 99.81% |          |
|                      |                   | <i>Fusarium</i> sp.                         | MK351450  | 99.81% |          |
|                      |                   | <i>Fusarium oxysporum</i>                   | MN856435  | 99.81% |          |
|                      |                   | <i>Fusarium solani</i>                      | MN486565  | 99.81% |          |
|                      |                   | <i>Fusarium concentricum</i>                | MH613764  | 99.81% |          |
|                      |                   | <i>Fusarium verticillioides</i>             | MH087117  | 99.81% |          |
| 178 FUS              | Undetermined      | <i>Fusarium fujikuroi</i>                   | KP998524  | 99.81% | MW390948 |
|                      |                   | <i>Allophoma minor</i>                      | MH8615011 | 100%   |          |
|                      |                   | <i>Didymella</i> sp.                        | KY828938  | 100%   |          |
| 197 FUS <sup>b</sup> | Guivero           | <i>Fungal species</i>                       | KY4968361 | 100%   | MW390949 |
|                      |                   | <i>Fusarium solani</i>                      | MN066126  | 100%   |          |
|                      |                   | <i>Fusarium</i> sp.                         | MH681596  | 100%   |          |
|                      |                   | Uncultured fungus clone                     | MF510804  | 100%   |          |
|                      |                   | <i>Fusarium keratoplasticum</i>             | KF255446  | 100%   |          |
| 198 FUS <sup>b</sup> | Sani Isla         | <i>Nectria haematococca</i>                 | DO535183  | 100%   | MW390950 |
|                      |                   | <i>Fusarium solani</i>                      | MN066126  | 100%   |          |
|                      |                   | <i>Fusarium</i> sp.                         | MH681596  | 100%   |          |
|                      |                   | Uncultured fungus clone                     | MF510804  | 100%   |          |
|                      |                   | <i>Fusarium keratoplasticum</i>             | KF255446  | 100%   |          |
| 199 FUS              | Nueva Providencia | <i>Nectria haematococca</i>                 | DO535183  | 100%   | MW390951 |
|                      |                   | <i>Fusarium oxysporum</i>                   | MT530243  | 100%   |          |
|                      |                   | <i>Fusarium solani</i>                      | MN452609  | 100%   |          |
| 200 FUS <sup>b</sup> | Sani Isla         | <i>Trichoderma</i> sp.*                     | MK871244  | 100%   | MW390952 |
|                      |                   | <i>Fusarium solani</i>                      | MN066126  | 100%   |          |
|                      |                   | <i>Fusarium</i> sp.                         | MH681596  | 100%   |          |
|                      |                   | Uncultured fungus clone                     | MF510804  | 100%   |          |
|                      |                   | <i>Fusarium keratoplasticum</i>             | KF255446  | 100%   |          |
| 205 FUS <sup>c</sup> | Guivero           | <i>Nectria haematococca</i>                 | DO535183  | 100%   | MW390953 |
|                      |                   | <i>Rhizopus microsporus</i>                 | KY828894  | 99.85% |          |

**Note:** based on BLAST searches, the specific identity of most of these isolates could not be determined since their ITS sequences shared high similarity values with several GenBank sequences representing different species. At genus level, 20 isolates belonged to *Fusarium*, four to *Rhizopus*, and one to *Penicillium*. As for the remaining three isolates (155 FUS, 159 FUS and 178 FUS), their generic identity could not be determined as they all showed high sequence similarity with several GenBank sequences corresponding to different genera, i.e., *Chaetomium* or *Humicola*, *Ectophoma* or *Paraphoma*, and *Allophoma* or *Didymella*, respectively. Among the 20 *Fusarium* isolates, 17 (85%) were identified as species of the FSSC Clade 3. Based on BLAST results, the remaining three isolates (168 FUS, 170 FUS and 199 FUS) were tentatively assigned to species belonging to other complexes, i.e., *Fusarium fujikuroi* (FFSC), *Fusarium oxysporum* (FOSC) or *Fusarium redolens* (FRSC). All four isolates representing the genus *Rhizopus* were unequivocally identified as *Rhizopus microsporus*. The specific identity of the isolate 164 FUS remains unknown as its sequence of ITS shared maximum similarity with GenBank sequences obtained from five *Penicillium* species. The isolate 159 FUS was neither unequivocally identified at species level since it matched with several GenBank sequences representing *Ectophoma pomi* (MT112289 and KJ767076) and *Paraphoma radicina* (MH425313).

**Table S2.** GenBank sequences from 130 fungal specimens used in phylogenetic analyses.

| Species ID in GenBank              | Isolate <sup>a-e</sup> | GenBank Accession No. |           |               | Host                   |
|------------------------------------|------------------------|-----------------------|-----------|---------------|------------------------|
|                                    |                        | LSU                   | ITS       | EF-1 $\alpha$ |                        |
| <i>Fusarium acutisporum</i>        | NRRL 22574*            | AF178378              | NR 169884 | AF178345      | –                      |
| <i>Fusarium ambrosium</i>          | NRRL 20438             | DQ236357              | DQ094315  | AF178332      | Tea plant              |
| <i>Fusarium bataticola</i>         | NRRL 22402*            | AF178377              | AF178408  | AF178344      | <i>Ipomoea batatas</i> |
| <i>Fusarium borneense</i>          | NRRL 22579*            | AF178384              | AF178415  | AF178352      | Bark                   |
| <i>Fusarium catenatum</i>          | NRRL 54992             | KC808255              | KC808255  | KC808213      | Unknown host           |
| <i>Fusarium catenatum</i>          | NRRL 54993*            | KC808256              | KC808256  | KC808214      | Unknown host           |
| <i>Fusarium crassum</i>            | CBS 144386*            | LR583709              | LR583709  | LR583604      | –                      |
| <i>Fusarium croci</i>              | CPC 27186*             | LT746265              | LT746265  | LT746216      | <i>Citrus sinensis</i> |
| <i>Fusarium cryptoseptatum</i>     | NRRL 22412*            | AF178383              | AF178414  | AF178351      | –                      |
| <i>Fusarium euwallaceae</i>        | NRRL 54722*            | JQ038014              | JQ038014  | JQ038007      | –                      |
| <i>Fusarium falciforme</i>         | 024 FUS                | KC573882              | KC573925  | –             | <i>Eretmochelys</i>    |
| <i>Fusarium falciforme</i>         | 033 FUS                | KC573883              | KC573932  | –             | <i>Chelonia mydas</i>  |
| <i>Fusarium falciforme</i>         | NRRL 22781             | DQ236376              | DQ094334  | DQ246849      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 22938             | DQ236380              | DQ094338  | DQ246855      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 25456             | DQ236386              | DQ094344  | DQ246862      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 28351             | DQ236400              | DQ094358  | DQ246881      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 28548             | DQ236405              | DQ094363  | DQ246889      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 28549             | DQ236406              | DQ094364  | DQ246890      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 28556             | DQ236412              | DQ094370  | DQ246897      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 28562             | DQ236418              | DQ094376  | DQ246903      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32307             | DQ236447              | DQ094405  | DQ246935      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32308             | DQ236448              | DQ094406  | DQ246936      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32312             | DQ236452              | DQ094410  | DQ246940      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32339             | DQ236478              | DQ094436  | DQ246967      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32502             | DQ236507              | DQ094465  | DQ246999      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32505             | DQ236509              | DQ094467  | DQ247002      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32538             | DQ236511              | DQ094469  | DQ247004      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32540             | DQ236513              | DQ094471  | DQ247006      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32542             | DQ236515              | DQ094473  | DQ247008      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32545             | DQ236518              | DQ094476  | DQ247011      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32714             | DQ236538              | DQ094496  | DQ247034      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32778             | DQ236591              | DQ094549  | DQ247088      | Horse                  |
| <i>Fusarium falciforme</i>         | NRRL 32790             | DQ236601              | DQ094559  | DQ247099      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32828             | DQ236636              | DQ094594  | DQ247135      | Human                  |
| <i>Fusarium falciforme</i>         | NRRL 32872             | DQ236665              | DQ094623  | DQ247169      | Dog                    |
| <i>Fusarium falciforme</i>         | NRRL 32928             | DQ236672              | DQ094630  | DQ247176      | Human                  |
| <i>Fusarium falciforme</i>         | CBS 47567*             | MG189915              | NR 164424 | LT906669      | –                      |
| <i>Fusarium ferrugineum</i>        | NRRL 32437             | DQ236488              | DQ094446  | DQ246979      | Human                  |
| <i>Fusarium gamsii</i>             | NRRL 43502             | DQ790532              | DQ790532  | DQ790488      | Human                  |
| <i>Fusarium illudens</i>           | NRRL 22090             | AF178362              | AF178393  | AF178326      | –                      |
| <i>Fusarium keratoplasticum</i>    | NRRL 54963             | KC808230              | KC808230  | KC808190      | Unknown host           |
| <i>Fusarium keratoplasticum</i>    | NRRL 54965             | KC808232              | KC808232  | KC808192      | Unknown host           |
| <i>Fusarium keratoplasticum</i>    | NRRL 54975             | KC808240              | KC808240  | KC808199      | Unknown host           |
| <i>Fusarium keratoplasticum</i>    | NRRL 54998             | KC808258              | KC808258  | KC808216      | Unknown host           |
| <i>Fusarium keratoplasticum</i>    | NRRL 54999             | KC808259              | KC808259  | KC808217      | Unknown host           |
| <i>Fusarium keratoplasticum</i>    | NRRL 62544             | KC808261              | KC808261  | KC808219      | Unknown host           |
| <i>Fusarium keratoplasticum</i>    | FRC S-2477*            | JN235282              | NR 130690 | JN235712      | Sink drain             |
| <i>Fusarium lichenicola</i>        | NRRL 28030             | DQ236397              | DQ094355  | DQ246877      | Human                  |
| <i>Fusarium liriodendri</i>        | NRRL 22389*            | AF178373              | AF178404  | AF178340      | <i>L. tulipifera</i>   |
| <i>Fusarium neocosmosporiellum</i> | CBS 32554*             | KM231670              | KM231803  | LR583664      | –                      |

<sup>a</sup>Type material; <sup>b</sup>CBS = Westerdijk Fungal Biodiversity Institute, Utrecht (The Netherlands); <sup>c</sup>CPC = Culture collection of Pedro Crous, housed at CBS; <sup>d</sup>FRC = *Fusarium* Research Center, Pennsylvania State University (USA); <sup>e</sup>FUS = Real Jardín Botánico CSIC, Madrid (Spain); <sup>f</sup>NRRL = Agricultural Research Service, Peoria (USA). Specimens in square brackets were initially identified as *F. solani* by Sarmiento-Ramírez et al. [61], but actually correspond to *F. keratoplasticum* [57]. Dashes indicate lack of data.

Table S2. (Continuation).

|                                  |             |          |           |          |                            |
|----------------------------------|-------------|----------|-----------|----------|----------------------------|
| <i>Fusarium petrophilum</i>      | NRRL 28546  | DQ236403 | DQ094361  | DQ246887 | Human                      |
| <i>Fusarium petrophilum</i>      | NRRL 54986  | KC808250 | KC808250  | KC808208 | Unknown host               |
| <i>Fusarium phaseoli</i>         | CBS 26550   | MH868124 | MH856617  | HE647964 | –                          |
| <i>Fusarium piperis</i>          | NRRL 22570* | AF178391 | AF178422  | AF178360 | <i>Piper nigrum</i>        |
| <i>Fusarium plagianthi</i>       | NRRL 22632* | AF178386 | AF178417  | AF178354 | –                          |
| <i>Fusarium protoensiforme</i>   | NRRL 22178* | AF178368 | AF178399  | AF178334 | Dicot tree                 |
| <i>Fusarium pseudoradicicola</i> | NRRL 25137* | JF740899 | JF740899  | JF740757 | –                          |
| <i>Fusarium regulare</i>         | CBS 19035   | MH867150 | MH855640  | HE647965 | –                          |
| [ <i>Fusarium solani</i> ]       | 001 AFUS    | JN939570 | FR691753  | –        | <i>Caretta caretta</i>     |
| [ <i>Fusarium solani</i> ]       | 001 CFUS    | KC594706 | FR691754  | –        | <i>Caretta caretta</i>     |
| [ <i>Fusarium solani</i> ]       | 010 FUS     | KC573904 | FR691761  | –        | <i>Caretta caretta</i>     |
| [ <i>Fusarium solani</i> ]       | 013 FUS     | KC573907 | FR691764  | –        | <i>Caretta caretta</i>     |
| [ <i>Fusarium solani</i> ]       | 014 FUS     | KC573908 | FR691757  | –        | <i>Caretta caretta</i>     |
| [ <i>Fusarium solani</i> ]       | 015 FUS     | KC573909 | FR691759  | –        | <i>Caretta caretta</i>     |
| [ <i>Fusarium solani</i> ]       | 028 FUS     | KC573914 | KC573927  | –        | <i>Chelonia mydas</i>      |
| [ <i>Fusarium solani</i> ]       | 031 FUS     | KC573917 | KC573930  | –        | <i>Chelonia mydas</i>      |
| [ <i>Fusarium solani</i> ]       | 034 FUS     | KC573918 | KC573933  | –        | <i>Chelonia mydas</i>      |
| [ <i>Fusarium solani</i> ]       | 036 FUS     | KC573919 | KC573935  | –        | <i>Chelonia mydas</i>      |
| <i>Fusarium solani</i>           | 137 FUS     | KC573895 | KC573984  | –        | Aquarium                   |
| <i>Fusarium solani</i>           | 138 FUS     | KC573896 | KC573985  | –        | Aquarium                   |
| [ <i>Fusarium solani</i> ]       | 228 FUS     | KC573921 | KC574009  | –        | <i>Chelonia mydas</i>      |
| <i>Fusarium solani</i>           | NRRL 22779  | DQ236375 | DQ094333  | DQ246848 | Human                      |
| <i>Fusarium solani</i>           | NRRL 22783  | DQ236377 | DQ094335  | DQ246851 | Seal                       |
| <i>Fusarium solani</i>           | NRRL 25083  | JF740882 | JF740882  | JF740714 | <i>Musca domestica</i>     |
| <i>Fusarium solani</i>           | NRRL 25101  | JF740886 | JF740886  | JF740728 | <i>Boophilus</i> sp.       |
| <i>Fusarium solani</i>           | NRRL 32484  | DQ236491 | DQ094449  | DQ246982 | Human                      |
| <i>Fusarium solani</i>           | NRRL 32737  | DQ236560 | DQ094518  | DQ247057 | Human                      |
| <i>Fusarium solani</i>           | NRRL 32810  | DQ236619 | DQ094577  | DQ247118 | Human                      |
| <i>Fusarium solani</i>           | NRRL 52699  | JF740905 | JF740905  | JF740782 | <i>Mahanarva andigena</i>  |
| <i>Fusarium solani</i>           | NRRL 52704  | JF740908 | JF740908  | JF740786 | <i>Tetranychus urticae</i> |
| <i>Fusarium solani</i>           | NRRL 52778  | JF740931 | JF740931  | JF740846 | <i>Eurygaster</i> sp.      |
| <i>Fusarium solani</i>           | NRRL 52798  | JF740936 | JF740936  | JF740866 | <i>T. myopaeformis</i>     |
| <i>Fusarium solani</i>           | CBS 140079* | KT313633 | NR 163531 | KT313611 | –                          |
| <i>Fusarium</i> sp.              | NRRL 54974  | KC808239 | KC808239  | KC808198 | Unknown host               |
| <i>Fusarium</i> sp.              | NRRL 54970  | KC808236 | KC808236  | KC808195 | Unknown host               |
| <i>Fusarium</i> sp.              | NRRL 32309  | DQ236449 | DQ094407  | DQ246937 | Human                      |
| <i>Fusarium</i> sp.              | NRRL 54979  | KC808244 | KC808244  | KC808202 | Unknown host               |
| <i>Fusarium</i> sp.              | NRRL 54982  | KC808247 | KC808247  | KC808205 | Unknown host               |
| <i>Fusarium</i> sp.              | NRRL 22611  | DQ236368 | DQ094326  | DQ246841 | Human                      |
| <i>Fusarium</i> sp.              | NRRL 22098  | DQ236343 | DQ094301  | AF178327 | Cucurbit                   |
| <i>Fusarium</i> sp.              | NRRL 22141  | DQ236349 | DQ094307  | AF178329 | Cucurbit                   |
| <i>Fusarium</i> sp.              | NRRL 22157  | DQ236348 | DQ094306  | AF178359 | <i>Morus alba</i>          |
| <i>Fusarium</i> sp.              | NRRL 22163  | AF178363 | AF178394  | AF178328 | <i>X. piperitum</i>        |
| <i>Fusarium</i> sp.              | NRRL 22278  | DQ236351 | DQ094309  | AF178337 | <i>Pisum sativum</i>       |
| <i>Fusarium</i> sp.              | NRRL 22354  | AF178371 | AF178402  | AF178338 | Bark                       |
| <i>Fusarium</i> sp.              | NRRL 22400  | DQ236345 | DQ094303  | AF178343 | <i>Ipomoea batatas</i>     |
| <i>Fusarium</i> sp.              | NRRL 22640  | DQ236369 | DQ094327  | DQ246842 | Human                      |
| <i>Fusarium</i> sp.              | NRRL 22642  | DQ236371 | DQ094329  | DQ246844 | Prawn                      |
| <i>Fusarium</i> sp.              | NRRL 22645  | DQ236372 | DQ094330  | DQ246845 | Shrimp                     |
| <i>Fusarium</i> sp.              | NRRL 22791  | DQ236379 | DQ094337  | DQ246853 | <i>Iguana</i> sp.          |
| <i>Fusarium</i> sp.              | NRRL 22820  | DQ236352 | DQ094310  | AF178355 | <i>Glycine max</i>         |
| <i>Fusarium</i> sp.              | NRRL 25391  | DQ236385 | DQ094343  | DQ246860 | Shrimp                     |
| <i>Fusarium</i> sp.              | NRRL 25726  | DQ236387 | DQ094345  | DQ246863 | Human                      |
| <i>Fusarium</i> sp.              | NRRL 28014  | DQ236396 | DQ094354  | DQ246872 | Human                      |
| <i>Fusarium</i> sp.              | NRRL 28550  | DQ236407 | DQ094365  | DQ246891 | Human                      |
| <i>Fusarium</i> sp.              | NRRL 31165  | DQ236436 | DQ094394  | DQ246921 | Human                      |
| <i>Fusarium</i> sp.              | NRRL 32317  | DQ236456 | DQ094414  | DQ246945 | Treefish                   |
| <i>Fusarium</i> sp.              | NRRL 32705  | DQ236530 | DQ094488  | DQ247025 | Human                      |

Table S2. (Continuation).

|                               |             |          |          |          |                            |
|-------------------------------|-------------|----------|----------|----------|----------------------------|
| <i>Fusarium</i> sp.           | NRRL 32711  | DQ236535 | DQ094493 | DQ247031 | Human                      |
| <i>Fusarium</i> sp.           | NRRL 32751  | DQ236573 | DQ094531 | DQ247070 | Human                      |
| <i>Fusarium</i> sp.           | NRRL 32780  | DQ236593 | DQ094551 | DQ247090 | Sea turtle                 |
| <i>Fusarium</i> sp.           | NRRL 32792  | DQ236603 | DQ094561 | DQ247101 | Human                      |
| <i>Fusarium</i> sp.           | NRRL 32794  | DQ236605 | DQ094563 | DQ247103 | Humidifier coolant         |
| <i>Fusarium</i> sp.           | NRRL 32821  | DQ236629 | DQ094587 | DQ247128 | Turtle egg                 |
| <i>Fusarium</i> sp.           | NRRL 32862  | DQ236663 | DQ094621 | DQ247167 | Unknown host               |
| <i>Fusarium</i> sp.           | NRRL 32959  | DQ236674 | DQ094632 | DQ247178 | Human                      |
| <i>Fusarium</i> sp.           | NRRL 43690  | EF453167 | EF453167 | EF453015 | Human                      |
| <i>Fusarium</i> sp.           | NRRL 46596  | GU170647 | GU170647 | GU170627 | Human                      |
| <i>Fusarium</i> sp.           | NRRL 54721  | JQ743210 | JQ743210 | JQ743208 | <i>Hippocampus erectus</i> |
| <i>Fusarium stercicola</i>    | CBS 142481* | MG250480 | MG250476 | LR583658 | –                          |
| <i>Fusarium striatum</i>      | NRRL 22101  | AF178367 | AF178398 | AF178333 | Cotton cloth               |
| <i>Fusarium suttonianum</i>   | NRRL 22608  | DQ236365 | DQ094323 | DQ246838 | Human                      |
| <i>Fusarium suttonianum</i>   | NRRL 28000  | DQ236389 | DQ094347 | DQ246865 | Human                      |
| <i>Fusarium suttonianum</i>   | NRRL 28001  | DQ236390 | DQ094348 | DQ246866 | Human                      |
| <i>Fusarium suttonianum</i>   | NRRL 32316  | DQ236455 | DQ094413 | DQ246944 | Human                      |
| <i>Fusarium suttonianum</i>   | NRRL 54972  | KC808238 | KC808238 | KC808197 | Unknown host               |
| <i>Fusarium suttonianum</i>   | NRRL 32858* | DQ236659 | DQ094617 | DQ247163 | Human                      |
| <i>Fusarium tonkinense</i>    | NRRL 32755  | DQ236576 | DQ094534 | DQ247073 | Turtle                     |
| <i>Fusarium walthergamsii</i> | NRRL 32770  | DQ236586 | DQ094544 | DQ247083 | Human                      |
| <i>Fusarium walthergamsii</i> | NRRL 32323* | DQ236462 | DQ094420 | DQ246951 | –                          |

**Table S3.** Bacteria isolated from *P. unifilis* eggshells and putative identity based on 16S Blast results.

| Isolate | Geographic origin | Putative species name <sup>a</sup>     | 16S GenBank Accession No. | Identity | Phylum         |
|---------|-------------------|--|---------------------------|----------|----------------|
| B13     | Nueva Providencia | <i>Bacillus thuringiensis</i>          | CP050183                  | 99.93%   | Firmicutes     |
|         |                   | <i>Bacillus proteolyticus</i>          | MT184819                  | 99.93%   |                |
|         |                   | <i>Bacillus wiedmannii</i>             | AP022643                  | 99.93%   |                |
|         |                   | <i>Bacillus cereus</i>                 | CP028009                  | 99.93%   |                |
|         |                   | <i>Bacillus albus</i>                  | CP040344                  | 99.93%   |                |
|         |                   | <i>Bacillus luti</i>                   | CP040336                  | 99.93%   |                |
|         |                   | <i>Bacillus anthracis</i>              | KM888109                  | 99.93%   |                |
| B14     | Nueva Providencia | <i>Bacillus bombisepticus</i>          | CP007512                  | 99.93%   | Firmicutes     |
|         |                   | <i>Bacillus wiedmannii</i>             | AP022643                  | 98.31%   |                |
|         |                   | <i>Bacillus cereus</i>                 | CP028009                  | 98.31%   |                |
|         |                   | <i>Bacillus thuringiensis</i>          | MT598028                  | 98.23%   |                |
|         |                   | <i>Bacillus proteolyticus</i>          | MT184819                  | 98.23%   |                |
| B15     | Nueva Providencia | <i>Bacillus paranthracis</i>           | MN904873                  | 98.23%   | Actinobacteria |
|         |                   | <i>Tsukamurella</i> sp.                | MN075319                  | 99.86%   |                |
|         |                   | <i>Tsukamurella paurometabola</i>      | LR131273                  | 99.79%   |                |
|         |                   | <i>Tsukamurella inchoensis</i>         | AB907635                  | 99.79%   |                |
| B16     | Guiyero           | <i>Tsukamurella tyrosinosolvens</i>    | FJ643549                  | 99.44%   | Proteobacteria |
|         |                   | <i>Paracoccus</i> sp.                  | AM084045                  | 99.86%   |                |
|         |                   | <i>Paracoccus huijuniae</i>            | MN330433                  | 99.85%   |                |
| B17     | Guiyero           | <i>Paracoccus aminovorans</i>          | HQ005404                  | 99.78%   | Actinobacteria |
|         |                   | <i>Pimelobacter</i> sp.                | KC252718                  | 99.12%   |                |
|         |                   | <i>Pimelobacter simplex</i>            | NR_119355                 | 99.09%   |                |
| B18     | Sani Isla         | <i>Nocardioides aromaticivorans</i>    | GU735484                  | 99.02%   | Actinobacteria |
|         |                   | <i>Nocardioides kongjuensis</i>        | NR_043651                 | 99.72%   |                |
| B19     | Sani Isla         | <i>Nocardioides panaciterrae</i>       | AB257719                  | 99.45%   | Actinobacteria |
|         |                   | <i>Gordonia</i> sp.                    | KC211011                  | 99.93%   |                |
|         |                   | Uncultured actinobacterium             | JQ919182                  | 99.93%   |                |
|         |                   | <i>Gordonia sihwensis</i>              | NR_025505                 | 99.86%   |                |
| B20     | Sani Isla         | <i>Gordonia cholesterolivorans</i>     | NR_044445                 | 99.86%   | Proteobacteria |
|         |                   | <i>Ralstonia</i> sp.                   | AY860250                  | 99.86%   |                |
|         |                   | <i>Cupriavidus</i> sp.                 | MG725957                  | 99.79%   |                |
|         |                   | <i>Cupriavidus pauculus</i>            | CP044065                  | 99.18%   |                |
|         |                   | <i>Cupriavidus plantarum</i>           | HQ438088                  | 99.18%   |                |
| B21     | Sani Isla         | <i>Ralstonia eutropha</i>              | AF027407                  | 99.11%   | Proteobacteria |
|         |                   | <i>Pseudoxanthomonas</i> sp.           | LC481374                  | 100%     |                |
|         |                   | Uncultured bacterium clone             | HQ218747                  | 100%     |                |
|         |                   | <i>Pseudoxanthomonas indica</i>        | JQ659945                  | 100%     |                |
| B22     | Sani Isla         | <i>Pseudoxanthomonas japonensis</i>    | LC015564                  | 100%     | Proteobacteria |
|         |                   | <i>Pseudomonas</i> sp.                 | KP986946                  | 100%     |                |
|         |                   | <i>Pseudomonas mendocina</i>           | EF208965                  | 99.93%   |                |
|         |                   | <i>Pseudomonas resinovorans</i>        | MF943158                  | 99.86%   |                |
| B23     | Sani Isla         | <i>Pseudomonas aeruginosa</i>          | KF929419                  | 99.79%   | Proteobacteria |
|         |                   | <i>Pseudomonas</i> sp.                 | CP045118                  | 99.45%   |                |
|         |                   | <i>Pseudomonas denitrificans</i>       | CP043626                  | 99.38%   |                |
|         |                   | <i>Pseudomonas nitroreducens</i>       | MH675504                  | 99.38%   |                |
|         |                   | <i>Pseudomonas multiresinivorans</i>   | CP048833                  | 99.31%   |                |
|         |                   | <i>Pseudomonas azelaica</i>            | AM088475                  | 99.25%   |                |
| B24     | Sani Isla         | <i>Pseudomonas aeruginosa</i>          | MF144534                  | 99.18%   | Proteobacteria |
|         |                   | <i>Delftia</i> sp.                     | MT101746                  | 99.93%   |                |
|         |                   | <i>Delftia tsuruhatensis</i>           | MH478206                  | 99.93%   |                |
|         |                   | <i>Delftia lacustris</i>               | MH333093                  | 99.93%   |                |
|         |                   | Uncultured bacterium clone             | KX508964                  | 99.93%   |                |
|         |                   | Uncultured Comamonadaceae              | JN038272                  | 99.93%   |                |
| B25     | Undetermined      | <i>Delftia acidovorans</i>             | GU459215                  | 99.86%   | Bacteroidetes  |
|         |                   | <i>Chryseobacterium gleum</i>          | KX579964                  | 99.44%   |                |
|         |                   | <i>Chryseobacterium aquifrigidense</i> | KP893287                  | 99.42%   |                |
|         |                   | <i>Chryseobacterium flavum</i>         | MK116543                  | 99.37%   |                |
|         |                   | <i>Chryseobacterium indologenes</i>    | KX228235                  | 99.37%   |                |
|         |                   | <i>Chryseobacterium arthrosphaerae</i> | LC040953                  | 99.16%   |                |

<sup>a</sup>None of the isolates could be ascribed to a given species since multiple hits with identical or very similar sequence identity values were found.



Table S3. (Continuation).

|     |              |  |           |        |                              |
|-----|--------------|--|-----------|--------|------------------------------|
| B26 | Undetermined | <i>Achromobacter</i> sp.                 | LC093432  | 99.79% | Proteobacteria               |
|     |              | Uncultured bacterium clone               | KR233647  | 99.66% |                              |
|     |              | <i>Achromobacter aegirifaciens</i>       | NR_117707 | 99.66% |                              |
|     |              | <i>Achromobacter xylosoxidans</i>        | CP061008  | 99.59% |                              |
|     |              | <i>Achromobacter insolitus</i>           | CP038034  | 99.45% |                              |
|     |              | <i>Achromobacter denitrificans</i>       | CP053986  | 99.45% |                              |
|     |              | <i>Achromobacter insuavis</i>            | NR_117706 | 99.38% |                              |
|     |              | <i>Achromobacter ruhlandii</i>           | CP017433  | 99.31% |                              |
| B27 | Undetermined | <i>Elizabethkingia</i> sp.               | MN540121  | 100%   | Bacteroidetes                |
|     |              | <i>Elizabethkingia anophelis</i>         | CP034594  | 100%   |                              |
|     |              | <i>Elizabethkingia endophytica</i>       | CP016372  | 100%   |                              |
|     |              | <i>Chryseobacterium meningosepticum</i>  | AY683476  | 100%   |                              |
| B28 | Undetermined | <i>Stenotrophomonas maltophilia</i>      | LC066105  | 99.86% | Proteobacteria               |
|     |              | <i>Stenotrophomonas</i> sp.              | MN714633  | 99.86% |                              |
|     |              | Uncultured bacterium clone               | EF509504  | 99.80% |                              |
|     |              | <i>Pseudomonas</i> sp.                   | LC034239  | 99.73% |                              |
|     |              | <i>Pseudomonas hibiscicola</i>           | KC172017  | 99.66% |                              |
|     |              | <i>Pseudomonas geniculata</i>            | KJ147059  | 99.59% |                              |
| B29 | Undetermined | Bacterium enrichment culture             | HQ440208  | 99.93% | Actino- or<br>Proteobacteria |
|     |              | <i>Pseudomonas</i> sp.                   | KU291441  | 99.86% |                              |
|     |              | <i>Arthrobacter</i> sp.                  | AY641537  | 99.79% |                              |
|     |              | <i>Pseudomonas plecoglossicida</i>       | KU597529  | 99.73% |                              |
|     |              | <i>Pseudomonas putida</i>                | CP015202  | 99.72% |                              |
|     |              | <i>Pseudomonas monteilii</i>             | KF475842  | 99.66% |                              |
| B30 | Undetermined | <i>Stenotrophomonas</i> sp.              | KY672922  | 100%   | Proteobacteria               |
|     |              | Uncultured bacterium clone               | KU667239  | 100%   |                              |
|     |              | <i>Stenotrophomonas acidaminiphila</i>   | KF279369  | 100%   |                              |
|     |              | <i>Stenotrophomonas maltophilia</i>      | MK562366  | 100%   |                              |
| B31 | Undetermined | <i>Delftia tsuruhatensis</i>             | DQ864991  | 99.86% | Proteobacteria               |
|     |              | <i>Delftia</i> sp.                       | MT101746  | 99.86% |                              |
|     |              | <i>Delftia lacustris</i>                 | MH333093  | 99.86% |                              |
|     |              | Uncultured bacterium clone               | KX508964  | 99.86% |                              |
|     |              | <i>Delftia acidovorans</i>               | GU459215  | 99.79% |                              |
| B32 | Undetermined | <i>Pseudomonas</i> sp.                   | MH703466  | 99.93% | Proteobacteria               |
|     |              | <i>Stenotrophomonas</i> sp.              | CP029759  | 99.86% |                              |
|     |              | <i>Stenotrophomonas maltophilia</i>      | MK841317  | 99.86% |                              |
|     |              | Uncultured marine bacterium              | JF925027  | 99.86% |                              |
|     |              | <i>Stenotrophomonas pavanii</i>          | MN686363  | 99.79% |                              |
|     |              | [ <i>Pseudomonas</i> ] <i>geniculata</i> | KT748641  | 99.73% |                              |
| B33 | Undetermined | <i>Stenotrophomonas maltophilia</i>      | AB683956  | 99.86% | Proteobacteria               |
|     |              | Uncultured <i>Stenotrophomonas</i> sp.   | HQ595218  | 99.86% |                              |
|     |              | <i>Pseudomonas</i> sp.                   | KR911802  | 99.79% |                              |
|     |              | Uncultured bacterium clone               | EU805183  | 99.65% |                              |
|     |              | <i>Vibrio</i> sp.                        | DQ146981  | 99.65% |                              |
| B34 | Undetermined | <i>Pseudomonas putida</i>                | AY686638  | 99.79% | Actino- or<br>Proteobacteria |
|     |              | <i>Pseudomonas taiwanensis</i>           | NR_116172 | 99.72% |                              |
|     |              | <i>Pseudomonas</i> sp.                   | MT012082  | 99.72% |                              |
|     |              | <i>Pseudomonas plecoglossicida</i>       | LC507998  | 99.59% |                              |
|     |              | <i>Pseudomonas monteilii</i>             | MF045811  | 99.59% |                              |
|     |              | <i>Brevibacterium frigoritolerans</i>    | EU073968  | 99.52% |                              |

**Note:** the 22 bacterial isolates obtained here represent four different phyla, i.e., Proteobacteria (12 isolates, 54.5%), Actinobacteria (four, 18.2%), Firmicutes (two, 9.1%) and Bacteroidetes (two, 9.1%). Based on the closest matches of BLAST searches, the remaining two isolates (B29 and B34) could belong to either Actinobacteria or Proteobacteria. Among the Proteobacteria, two isolates (16.7%) were assigned to *Pseudomonas*, two others (16.7%) to *Delftia*, and B16, B21, B26 and B30 (33.3%) most probably represented *Paracoccus*, *Pseudoxanthomonas*, *Achromobacter*, and *Stenotrophomonas*, respectively. The genus of the isolates B20, B28, B32 and B33 (33.3%) could not be determined since BLAST revealed significant similarity (> 99%) to several sequences corresponding to different genera, i.e., *Ralstonia* or *Cupriavidus*, *Stenotrophomonas* or *Pseudomonas*, and *Stenotrophomonas*, *Pseudomonas* or *Vibrio*. Among the Actinobacteria, B15 corresponded to *Tsukamurella*, B18 to *Nocardioideis*, B19 to *Gordonia*, and B17 could belong either to *Pimelobacter* or *Nocardioideis*. Both representatives of Firmicutes (B13 and B14) corresponded to *Bacillus*. The isolates representing the phylum Bacteroidetes corresponded to *Cryseobacterium* (B25) and *Elizabethkingia* or *Cryseobacterium* (B27).

**Table S4.** GenBank 16S sequences from related bacterial species used in phylogenetic analyses.

| Species ID in GenBank                            | Isolate            | 16S GenBank Accession No. | Fragment*       |
|--|--------------------|---------------------------|-----------------|
| <i>Achromobacter aegrifaciens</i>                | LMG 26852          | CADIJY010000029           | 2–1435          |
| <i>Achromobacter agilis</i>                      | LMG 3411           | UFQB01000054              | 247–1773        |
| <i>Achromobacter animicus</i>                    | R-46662T           | HE613448                  | –               |
| <i>Achromobacter animicus</i>                    | R-46662            | NR_117615                 | –               |
| <i>Achromobacter animicus</i>                    | LMG 26690          | CADIJM010000037           | 2–1435          |
| <i>Achromobacter anxiifer</i>                    | LMG 26857          | CAHLAR010000027           | 2–1435          |
| <i>Achromobacter denitrificans</i>               | DSM 30026          | NR_042021                 | –               |
| <i>Achromobacter denitrificans</i>               | LMG 1231           | CADIJN010000119           | 237–1763        |
| <i>Achromobacter insolitus</i>                   | LCu2               | CP038034                  | 1780713–1782263 |
| <i>Achromobacter insolitus</i>                   | LMG 6003           | CADIJK010000027           | 45–1571         |
| <i>Achromobacter kerstersii</i>                  | LMG 3441           | CADIJQ010000032           | 25–1551         |
| <i>Achromobacter marplatensis</i>                | R-46660T           | HE613447                  | –               |
| <i>Achromobacter marplatensis</i>                | R-46660            | NR_117614                 | –               |
| <i>Achromobacter marplatensis</i>                | LMG 26219          | CADIJU010000049           | 367–1893        |
| <i>Achromobacter marplatensis</i>                | B2                 | NJIG010000044             | 245–1690        |
| <i>Achromobacter mucicolens</i>                  | R-46658T           | HE613446                  | –               |
| <i>Achromobacter mucicolens</i>                  | R-46658            | NR_117613                 | –               |
| <i>Achromobacter mucicolens</i>                  | LMG 26685          | CADIJP010000044           | 163–1689        |
| <i>Achromobacter panacis</i>                     | –                  | KR338991                  | –               |
| <i>Achromobacter panacis</i>                     | DCY105             | NR_165687                 | –               |
| <i>Achromobacter pestifer</i>                    | LMG 3431           | CADIJX010000020           | 263–1789        |
| <i>Achromobacter piechaudii</i>                  | NBRC102461         | NZ_BCTK01000022           | –               |
| <i>Achromobacter piechaudii</i>                  | LMG 1873           | CADIJS010000009           | 10–1536         |
| <i>Achromobacter ruhlandii</i>                   | SCCH3:ACH 33- 1365 | CP017433                  | 688341–689894   |
| <i>Achromobacter</i> sp.                         | DR405              | LC093432                  | –               |
| <i>Achromobacter</i> sp.                         | Fo40               | MF155647                  | –               |
| <i>Achromobacter veterisilvae</i>                | LMG 30378          | UFQC010000090             | 50–1576         |
| <i>Achromobacter xylosoxidans</i> <sup>(T)</sup> | 0119Ts             | MT664080                  | –               |
| <i>Achromobacter xylosoxidans</i> <sup>(T)</sup> | GD03               | CP061008                  | 1800478–1802131 |
| <i>Arthrobacter</i> sp.                          | LFTou2             | AY641537                  | –               |
| <i>Bacillus anthracis</i>                        | IHBB18033          | KM888109                  | –               |
| <i>Bacillus bombysepticus</i>                    | Wang               | CP007512                  | 89830–91390     |
| <i>Bacillus cereus</i>                           | SGAir0260          | CP028009                  | 1288835–1290389 |
| <i>Bacillus circulans</i>                        | Sn25-040808        | FJ155345                  | –               |
| <i>Bacillus licheniformis</i>                    | Sn13-040808        | FJ155337                  | –               |
| <i>Bacillus proteolyticus</i>                    | NWPZ7              | MT184819                  | –               |
| <i>Bacillus pumilus</i>                          | Sn6-040808         | FJ155331                  | –               |
| <i>Bacillus</i> sp.                              | JY14               | EU581833                  | –               |
| <i>Bacillus</i> sp.                              | 0919U              | MT664082                  | –               |
| <i>Bacillus</i> sp.                              | 0519Pg             | MT664083                  | –               |
| <i>Bacillus subtilis</i> <sup>(T)</sup>          | Sn12-040808        | FJ155336                  | –               |
| <i>Bacillus thuringiensis</i>                    | HER1410            | CP050183                  | 9160–10714      |
| <i>Bacillus wiedmannii</i>                       | PL1                | AP022643                  | 2238988–2240538 |
| <i>Bacterium enrichment</i>                      | CCZU12             | HQ440208                  | –               |
| <i>Brevibacterium frigoritolerans</i>            | CMGS4              | EU073968                  | –               |
| <i>Chryseobacterium aquifrigidense</i>           | R-21               | KP893287                  | –               |
| <i>Chryseobacterium arthrosphaerae</i>           | GS-3               | LC040953                  | –               |
| <i>Chryseobacterium culicis</i>                  | 0819Tu             | MT664085                  | –               |
| <i>Chryseobacterium gleum</i> <sup>(T)</sup>     | EY1                | KX579964                  | –               |
| <i>Chryseobacterium hispanicum</i>               | KCTC 22104         | QNUG010000096             | 111–1635        |
| <i>Chryseobacterium indologenes</i>              | Amic 5             | KX228235                  | –               |
| <i>Chryseobacterium massiliae</i>                | CUVET1223          | KJ190179                  | –               |
| <i>Chryseobacterium</i> sp.                      | CUVET1222          | KJ190178                  | –               |
| <i>Chryseobacterium</i> sp.                      | D136               | KF322149                  | –               |
| <i>Cupriavidus necator</i> <sup>(T)</sup>        | JS705              | AF027407                  | –               |

\*16S sequence obtained from a complete genome. The corresponding nucleotide range appears in the last column. T= type of the genus.

Table S4. (Continuation).

|  |               |                   |                 |
|--|---------------|-------------------|-----------------|
| <i>Cupriavidus pauculus</i>                          | FDAARGOS      | CP044065          | 3476779–3478401 |
| <i>Cupriavidus plantarum</i>                         | MA1-4a        | HQ438088          | –               |
| <i>Delftia acidovorans</i> <sup>(T)</sup>            | QS1           | GU459215          | –               |
| <i>Delftia tsuruhatensis</i>                         | –             | DQ864991          | –               |
| <i>Elizabethkingia anophelis</i>                     | JM-87 15-247  | MAGY01000034      | 251–1772        |
| <i>Elizabethkingia endophytica</i>                   | JM87          | CP016372          | 1224828–1226361 |
| <i>Elizabethkingia meningoseptica</i> <sup>(T)</sup> | YB-29         | AY683476          | –               |
| <i>Gordonia shandongensis</i>                        | DSM45094      | NZ_AUHE01000029   | –               |
| <i>Gordonia</i> sp.                                  | LYS13         | KC211011          | –               |
| <i>Mesobacillus campisalis</i>                       | SA2-6         | NZ_LAYY01000064   | 1515–2053       |
| <i>Nocardioides agariphilus</i>                      | KCTC 19276    | NZ_JADKPO01000007 | 351–1891        |
| <i>Nocardioides aromaticivorans</i>                  | SB10005       | GU735484          | –               |
| <i>Nocardioides panaciterrae</i>                     | KCTC 19136    | AB257719          | –               |
| <i>Nocardioides szechwanensis</i>                    | CGMCC 1.11147 | FNIC01000016      | 369–1908        |
| <i>Paracoccus aminovorans</i>                        | CT            | HQ005404          | –               |
| <i>Paracoccus</i> sp.                                | C84           | KF322148          | –               |
| <i>Paracoccus</i> sp.                                | R24650        | AM084045          | –               |
| <i>Pimelobacter</i> sp.                              | N044          | KC252718          | –               |
| <i>Pseudomonas aeruginosa</i> <sup>(T)</sup>         | VITLWS3       | KF929419          | –               |
| <i>Pseudomonas denitrificans</i>                     | BG1           | CP043626          | 676315–677857   |
| <i>Pseudomonas filiscindens</i>                      | ATCC BAA-697  | AY259924          | –               |
| <i>Pseudomonas geniculata</i>                        | OTU-a9        | KJ147059          | –               |
| <i>Pseudomonas geniculata</i>                        | C8            | KT748641          | –               |
| <i>Pseudomonas hibiscicola</i>                       | SH8           | KC172017          | –               |
| <i>Pseudomonas mendocina</i>                         | B6-1          | EF208965          | –               |
| <i>Pseudomonas monteilii</i>                         | IHB B 2329    | KF475842          | –               |
| <i>Pseudomonas multiresinivorans</i>                 | populi        | CP048833          | 817172–818740   |
| <i>Pseudomonas nitroreducens</i>                     | DSM 9128      | AM088475          | –               |
| <i>Pseudomonas plecoglossicida</i>                   | RD_AZPVI_05   | KU597529          | –               |
| <i>Pseudomonas plecoglossicida</i>                   | JCM 13970     | LC507998          | –               |
| <i>Pseudomonas putida</i>                            | KL33          | AY686638          | –               |
| <i>Pseudomonas putida</i>                            | B62           | CP015202          | 374165–375716   |
| <i>Pseudomonas</i> sp.                               | Fenol2C       | KU291441          | –               |
| <i>Pseudomonas</i> sp.                               | LS3K          | LC034239          | –               |
| <i>Pseudomonas</i> sp.                               | R5            | KR911802          | –               |
| <i>Pseudomonas</i> sp.                               | T2            | GU727815          | –               |
| <i>Pseudomonas</i> sp.                               | PVR-YHB-1-2   | KP986946          | –               |
| <i>Pseudomonas</i> sp.                               | PT1           | MK652307          | –               |
| <i>Pseudomonas</i> sp.                               | PT2           | MK652308          | –               |
| <i>Pseudomonas</i> sp.                               | PT4           | MK652310          | –               |
| <i>Pseudomonas</i> sp.                               | PT5           | MK652311          | –               |
| <i>Pseudomonas</i> sp.                               | PT6           | MK652312          | –               |
| <i>Pseudomonas</i> sp.                               | PT7           | MK652313          | –               |
| <i>Pseudomonas</i> sp.                               | J1            | MN128405          | –               |
| <i>Pseudomonas</i> sp.                               | 0619Th        | MT664098          | –               |
| <i>Pseudoxanthomonas indica</i>                      | R8-542        | JQ659945          | –               |
| <i>Pseudoxanthomonas japonensis</i>                  | AF59          | LC015564          | –               |
| <i>Pseudoxanthomonas jiangsuensis</i>                | DSM 22398     | PDWL01000056      | 388–1932        |
| <i>Pseudoxanthomonas</i> sp.                         | 45-43         | LC481374          | –               |
| <i>Ralstonia</i> sp.                                 | AU5980        | AY860250          | –               |
| <i>Stenotrophomonas acidaminiphila</i>               | SR50-5        | KF279369          | –               |
| <i>Stenotrophomonas maltophilia</i> <sup>(T)</sup>   | TI-1          | AB683956          | –               |
| <i>Stenotrophomonas maltophilia</i> <sup>(T)</sup>   | T6220-6-1b    | LC066105          | –               |
| <i>Stenotrophomonas rhizophila</i>                   | 0919Es        | MT664102          | –               |
| <i>Stenotrophomonas</i> sp.                          | BAB-6435      | KY672922          | –               |
| <i>Stenotrophomonas</i> sp.                          | pho           | CP029759          | 351352–352892   |
| <i>Tsukamurella incheonensis</i>                     | 1325          | AB907635          | –               |
| <i>Tsukamurella pulmonis</i>                         | Sn10-040808   | FJ155334          | –               |

Table S4. (Continuation).

|  |               |                 |          |
|--|---------------|-----------------|----------|
| <i>Tsukamurella tyrosinosolvens</i>    | Bx-62986      | FJ643549        | –        |
| Uncultured <i>Achromobacter</i> sp.    | ME128         | DQ917890        | –        |
| Uncultured actinobacterium             | GC0AA1ZA07PP1 | JQ919182        | –        |
| Uncultured bacterium                   | P7D82-599     | EF509504        | –        |
| Uncultured bacterium                   | 6C233176      | EU805183        | –        |
| Uncultured bacterium                   | CN1-94        | HQ218747        | –        |
| Uncultured bacterium                   | 15203         | KR233647        | –        |
| Uncultured bacterium                   | Ace13(9-10)   | KU667239        | –        |
| Uncultured bacterium                   | MTDH201308-62 | KX508964        | –        |
| Uncultured Comamonadaceae              | EK An354      | JN038272        | –        |
| Uncultured marine bacterium            | Tc-42         | JF925027        | –        |
| Uncultured <i>Stenotrophomonas</i> sp. | IC3081        | HQ595218        | –        |
| <i>Vibrio atlanticus</i>               | Evh13         | NZ OSDW01000040 | 408–1957 |
| <i>Vibrio cincinnatiensis</i>          | DSM19608      | FUXB01000057    | –        |
| <i>Vibrio parahaemolyticus</i>         | CFSAN025059   | LKQH01000018    | –        |
| <i>Vibrio</i> sp.                      | S1072         | FJ457349        | –        |
| <i>Vibrio</i> sp.                      | S1073         | FJ457350        | –        |
| <i>Vibrio</i> sp.                      | S1099         | FJ457358        | –        |
| <i>Vibrio</i> sp.                      | S1100         | FJ457359        | –        |
| <i>Vibrio</i> sp.                      | S1101         | FJ457360        | –        |
| <i>Vibrio</i> sp.                      | S1104         | FJ457361        | –        |
| <i>Vibrio</i> sp.                      | S1105         | FJ457362        | –        |
| <i>Vibrio</i> sp.                      | V205          | DQ146981        | –        |
| <i>Vibrio viridaestus</i>              | LJC006        | RJVQ01000027    | 418–1907 |