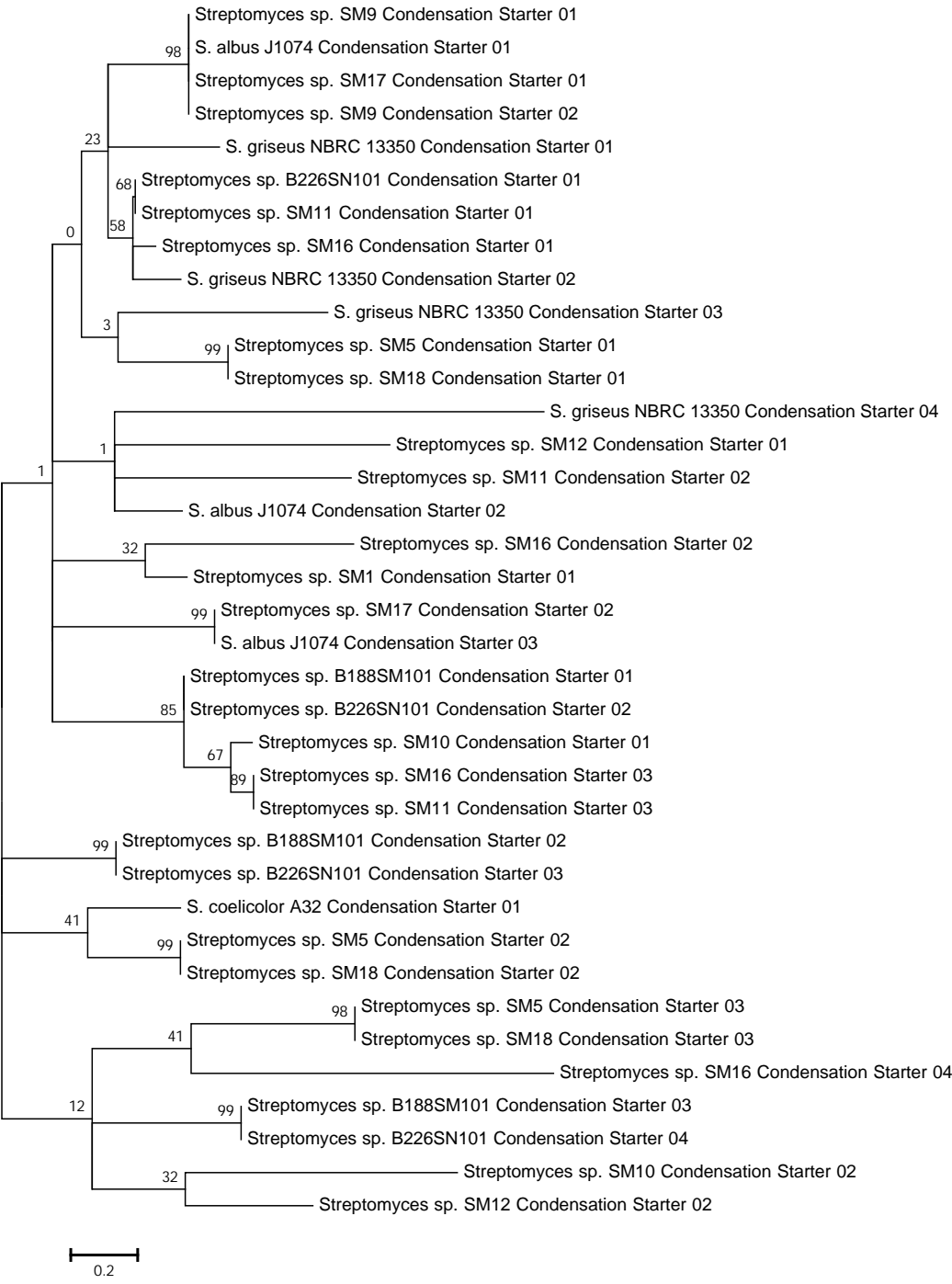
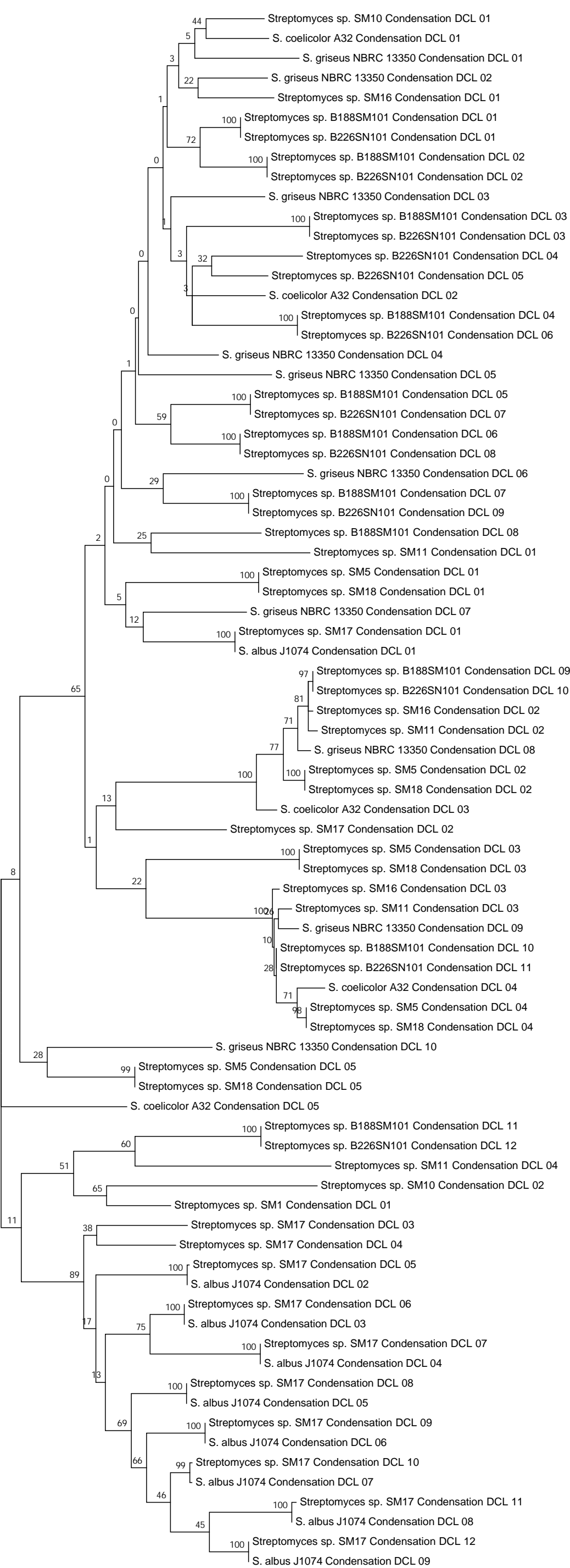




Supplementary Figure S1. Bootstrap-consensus (n=100) Maximum Likelihood phylogenetic tree of KS domain, deduced amino acid sequences of PKS gene clusters, from the genomes of marine *Streptomyces* spp. and from the genomes of selected reference terrestrial *Streptomyces* spp.



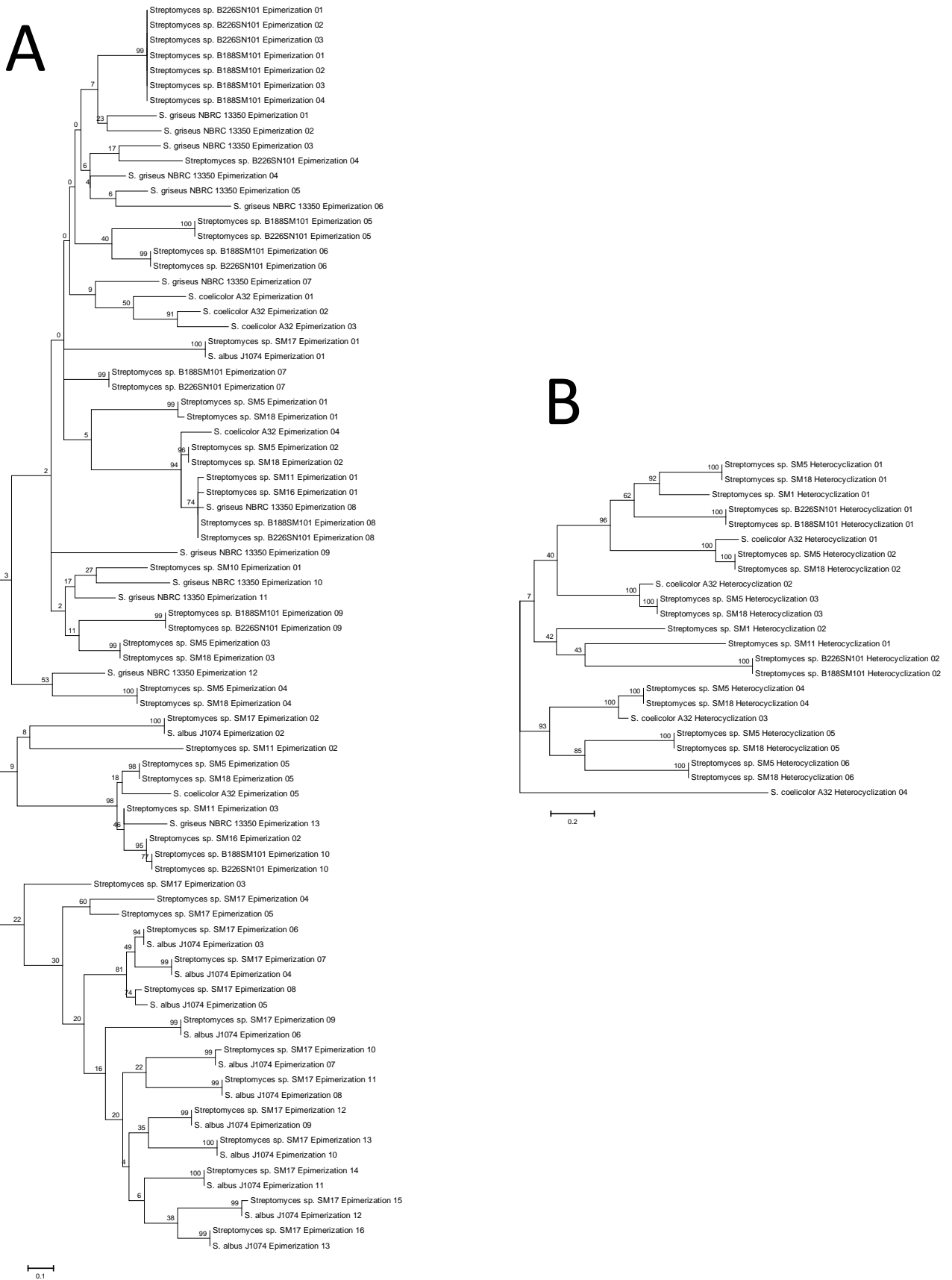
Supplementary Figure S2. Bootstrap-consensus (n=100) Maximum Likelihood phylogenetic tree of condensation starter domain, deduced amino acid sequences, of NRPS gene clusters, from the genomes of marine *Streptomyces* spp. and from the genomes of selected reference terrestrial *Streptomyces* spp.



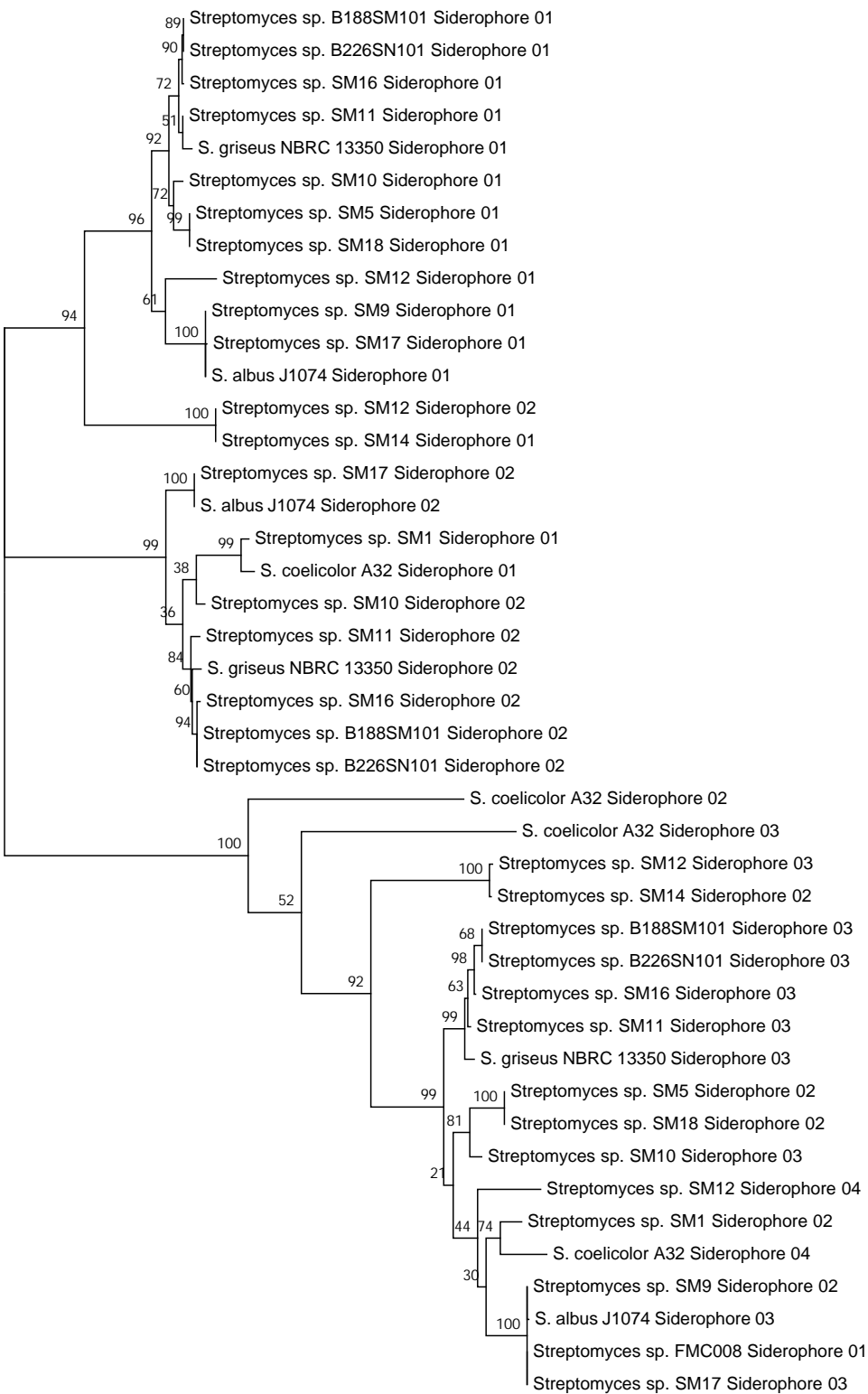
Supplementary Figure S3. Bootstrap-consensus (n=100) Maximum Likelihood phylogenetic tree of condensation DCL domain, deduced amino acid sequences, of NRPS gene clusters, from the genomes of marine *Streptomyces* spp. and from the genomes of selected reference terrestrial *Streptomyces* spp.





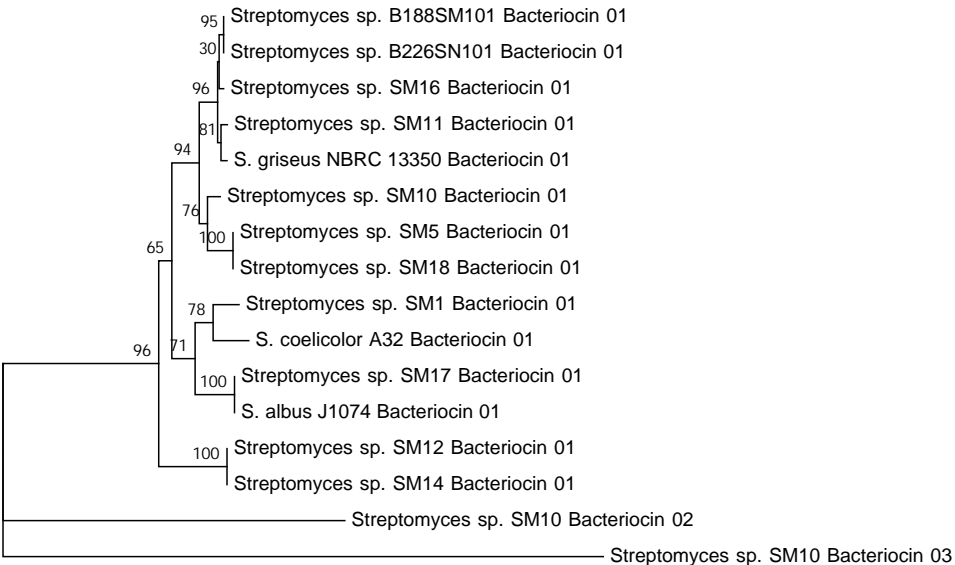


Supplementary Figure S5. Bootstrap-consensus (n=100) Maximum Likelihood phylogenetic trees of deduced amino acid sequences of (A) epimerization and (B) heterocyclization domains from NRPS gene clusters, from the genomes of marine *Streptomyces* spp. and from the genomes of selected reference terrestrial *Streptomyces* spp.



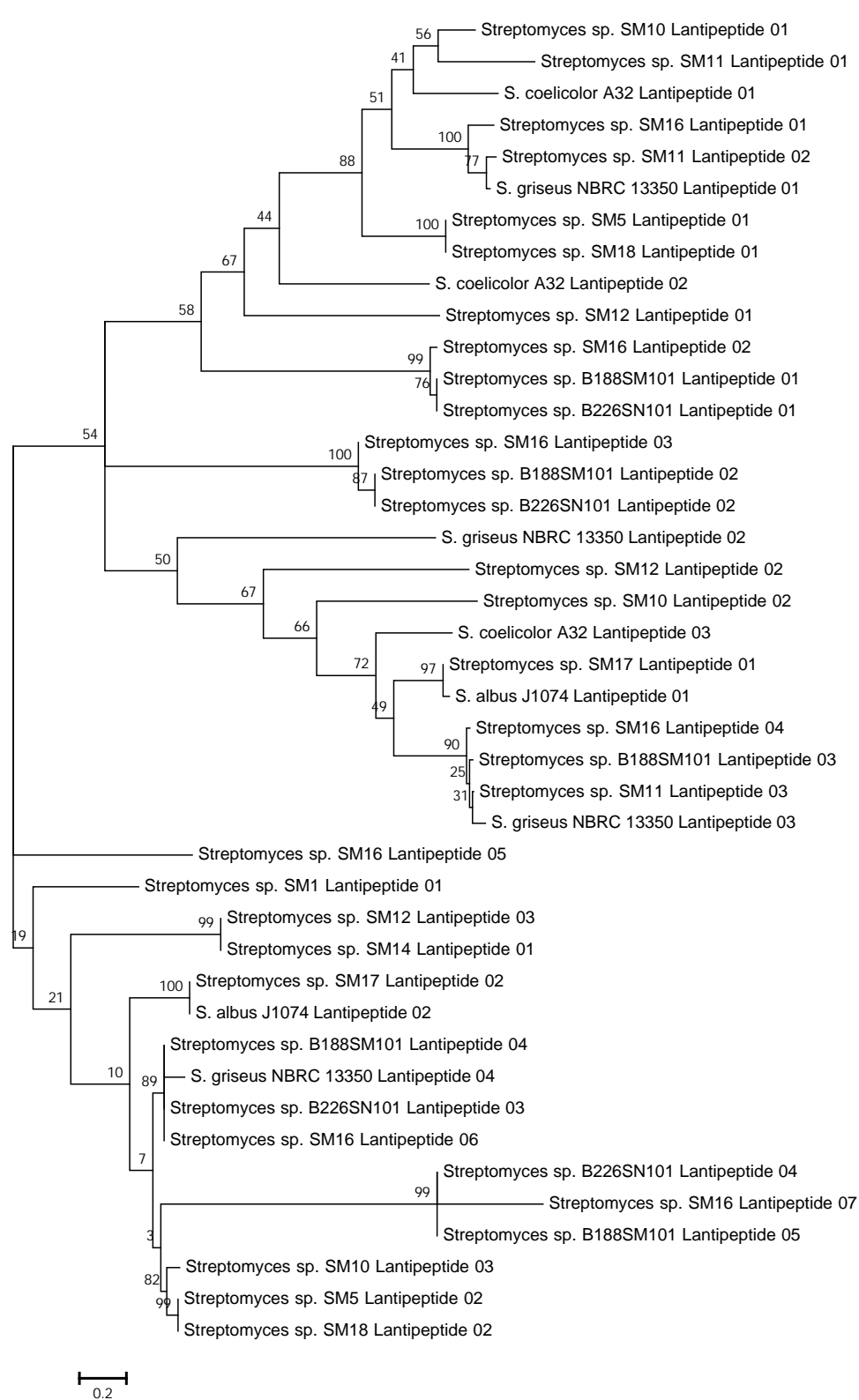
0.2

Supplementary Figure S6. Bootstrap-consensus (n=100) Maximum Likelihood phylogenetic trees of deduced amino acid sequences of *lucA-lucC* domains from siderophore gene clusters, from the genomes of marine *Streptomyces* spp. and from the genomes of selected reference terrestrial *Streptomyces* spp.



0.2

Supplementary Figure S7. Bootstrap-consensus (n=100) Maximum Likelihood phylogenetic trees of deduced amino acid sequences of DUF692 domains from bacteriocin gene clusters, from the genomes of marine *Streptomyces* spp. and from the genomes of selected reference terrestrial *Streptomyces* spp.



Supplementary Figure S8. Bootstrap-consensus (n=100) Maximum Likelihood phylogenetic trees of deduced amino acid sequences of LanC-like domains from lantipeptide gene clusters, from the genomes of marine *Streptomyces* spp. and from the genomes of selected reference terrestrial *Streptomyces* spp.



| Isolate ID | Percentage of sequences assigned to closest sequence in kraken classification with miniKraken database |
|------------|--|
| SM1        | 31.7% <i>Streptomyces coelicolor</i> A3 (2)<br>18.1% <i>Streptomyces</i> root                          |
| SM5        | 83.91% <i>Streptomyces</i> sp. Sirex AA-E  |
| SM9        | 97.4% <i>Streptomyces albus</i> J1074  |
| SM10       | 55.5% <i>Streptomyces</i> sp. Sirex AA-E   |
| SM11       | 78.7% <i>Streptomyces griseus</i> subsp. <i>griseus</i> NBRC 13350                                     |
| SM12       | 33.3% <i>Streptomyces</i> root<br>47.5% assigned to various <i>Streptomyces</i> spp.                   |
| SM14       | 35.1% <i>Streptomyces</i> root<br>47.4% assigned to various <i>Streptomyces</i> spp.                   |
| SM16       | 80.45% <i>Streptomyces griseus</i> subsp. <i>griseus</i> NBRC 13350                                    |
| SM17       | 97.8% <i>Streptomyces albus</i> J1074  |
| SM18       | 84.5% <i>Streptomyces</i> sp. Sirex AA-E   |
| FMC008     | 97.2% <i>Streptomyces albus</i> J1074  |
| B188M101   | 82.7% <i>Streptomyces griseus</i> subsp. <i>griseus</i> NBRC 13350                                     |
| B226SN101  | 82.22% <i>Streptomyces griseus</i> subsp. <i>griseus</i> NBRC 13350                                    |

**Supplementary Table S1.** Taxonomy of *Streptomyces* spp. isolates using KRAKEN.

| <b>B188M101</b>    |                          |                                      |                                      |
|--------------------|--------------------------|--------------------------------------|--------------------------------------|
| <b>Cluster no.</b> | <b>Cluster type</b>      | <b>Most similar known cluster</b>    | <b>% of genes showing similarity</b> |
| 1                  | NRPS                     | Heat Stable Antifungal Factor (HSAF) | 62                                   |
| 2                  | Butyrolactone            | Gamma - butyroactone                 | 100                                  |
| 3                  | Siderophore              | Desferrioxamine B                    | 100                                  |
| 4                  | NRPS-T1PKS               | Balhimycin                           | 8                                    |
| 5                  | NRPS                     | none                                 | 0                                    |
| 6                  | Lasso peptide            | SRO15-2005                           | 80                                   |
| 7                  | Others KS                | none                                 | 0                                    |
| 8                  | NRPS                     | Calcium-dependent antibiotic         | 5                                    |
| 9                  | Terpene                  | none                                 | 0                                    |
| 10                 | Ladderane-Arylpoyene     | Skylamycin                           | 12                                   |
| 11                 | Melanin                  | Melanin                              | 100                                  |
| 12                 | Ectoine                  | Ectoine                              | 100                                  |
| 13                 | Bacteriocin              | none                                 | 0                                    |
| 14                 | Lantipeptide             | none                                 | 0                                    |
| 15                 | T3-PKS                   | Alkylresorcinol                      | 66                                   |
| 16                 | Bacteriocin              | none                                 | 0                                    |
| 17                 | Others-Nrps-T1PKS        | Zorbamycin                           | 4                                    |
| 18                 | T1PKS-NRPS               | none                                 | 0                                    |
| 19                 | NRPS                     | Thaxtomin                            | 18                                   |
| 20                 | Terpene                  | none                                 | 0                                    |
| 21                 | Other                    | none                                 | 0                                    |
| 22                 | T1PKS                    | SGR-PTMs                             | 33                                   |
| 23                 | NRPS                     | none                                 | 0                                    |
| 24                 | T3PKS                    | Herboxidiene                         | 6                                    |
| 25                 | NRPS                     | none                                 | 0                                    |
| 26                 | Terpene                  | none                                 | 0                                    |
| 27                 | NRPS                     | Laspartomycin                        | 6                                    |
| 28                 | NRPS                     | none                                 | 0                                    |
| 29                 | NRPS                     | Daptomycin                           | 18                                   |
| 30                 | Lantipeptide             | none                                 | 0                                    |
| 31                 | Phenazine                | Lomofungin                           | 26                                   |
| 32                 | NRPS                     | none                                 | 0                                    |
| 33                 | NRPS                     | Friulimicin                          | 6                                    |
| 34                 | NRPS                     | Skylamycin                           | 16                                   |
| 35                 | Terpene                  | Hopene                               | 69                                   |
| 36                 | Siderophore              | Kinamycin                            | 8                                    |
| 37                 | NRPS                     | Friulimicin                          | 15                                   |
| 38                 | Butyrolactone            | Skylamycin                           | 14                                   |
| 39                 | Ectoine                  | Kosinostatin                         | 11                                   |
| 40                 | Lantipeptide             | AmfS                                 | 60                                   |
| 41                 | NRPS                     | none                                 | 0                                    |
| 42                 | Thiopeptide-Lantipeptide | none                                 | 0                                    |
| 43                 | NRPS-OthersKS            | Kirromycin                           | 8                                    |
| 44                 | Lasso peptide            | Chlortetracycline                    | 5                                    |
| 45                 | NRPS                     | Griseobactin                         | 52                                   |
| 46                 | Lantipeptide             | Chalcomycin                          | 9                                    |
| 47                 | NRPS                     | none                                 | 0                                    |
| 48                 | Terpene                  | Isorenieratene                       | 100                                  |
| 49                 | NRPS                     | Friulimicin                          | 18                                   |
| 50                 | NRPS                     | Coelichelin                          | 72                                   |
| 51                 | NRPS                     | Daptomycin                           | 4                                    |
| 52                 | NRPS                     | none                                 | 0                                    |
| 53                 | NRPS                     | none                                 | 0                                    |

Supplementary Table S2. Secondary metabolism gene cluster types in the draft genome of B188M101, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| <b>B226SN101</b>   |                          |                                   |                                      |
|--------------------|--------------------------|-----------------------------------|--------------------------------------|
| <b>Cluster no.</b> | <b>Cluster type</b>      | <b>Most similar known cluster</b> | <b>% of genes showing similarity</b> |
| 1                  | Bacteriocin              | none                              | 0                                    |
| 2                  | Terpene                  | none                              | 0                                    |
| 3                  | Others KS                | Eicosapentanoic acid              | 33                                   |
| 4                  | Arylpolyene-Ladderene    | Skylamycin                        | 12                                   |
| 5                  | NRPS-T1PKS               | HSAF                              | 75                                   |
| 6                  | Butyrolactone            | Gamma Butyrolactone               | 100                                  |
| 7                  | NRPS                     | none                              | 0                                    |
| 8                  | Siderophore              | Desferrioxamine B                 | 100                                  |
| 9                  | Melanin                  | Melanin                           | 100                                  |
| 10                 | Terpene                  | none                              | 0                                    |
| 11                 | NRPS-T1PKS               | Zorbamycin                        | 4                                    |
| 12                 | Ectoine                  | Kosinostatin                      | 11                                   |
| 13                 | Lantipeptide             | none                              | 0                                    |
| 14                 | Bacteriocin              | none                              | 0                                    |
| 15                 | T3PKS                    | Herboxidiene                      | 6                                    |
| 16                 | Other                    | none                              | 0                                    |
| 17                 | NRPS                     | none                              | 0                                    |
| 18                 | NRPS                     | none                              | 0                                    |
| 19                 | NRPS                     | none                              | 0                                    |
| 20                 | Terpene                  | Hopene                            | 69                                   |
| 21                 | NRPS                     | Calcium-dependent antibiotic      | 7                                    |
| 22                 | Terpene                  | none                              | 0                                    |
| 23                 | NRPS                     | Friulimicin                       | 15                                   |
| 24                 | NRPS                     | none                              | 0                                    |
| 25                 | Phenazine                | Lomofungin                        | 26                                   |
| 26                 | NRPS                     | Griseobactin                      | 29                                   |
| 27                 | Lasso peptide            | SRO15-2005                        | 60                                   |
| 28                 | Lasso peptide            | none                              | 0                                    |
| 29                 | NRPS                     | none                              | 0                                    |
| 30                 | Siderophore              | Kinamycin                         | 8                                    |
| 31                 | NRPS                     | Daptomycin                        | 18                                   |
| 32                 | Lantipeptide             | none                              | 0                                    |
| 33                 | NRPS                     | none                              | 0                                    |
| 34                 | NRPS                     | none                              | 0                                    |
| 35                 | NRPS-T1PKS               | Kanamycin                         | 2                                    |
| 36                 | NRPS                     | Virginiamycin                     | 11                                   |
| 37                 | Lantipeptide             | Guadinomine                       | 7                                    |
| 38                 | NRPS                     | Friulimicin                       | 15                                   |
| 39                 | NRPS-Others KS           | Kirromycin                        | 8                                    |
| 40                 | Butyrolactone            | Skylamycin                        | 14                                   |
| 41                 | Ectoine                  | Ectoine                           | 100                                  |
| 42                 | Thiopeptide-Lantipeptide | none                              | 0                                    |
| 43                 | T3PKS                    | Alkylresorcinol                   | 100                                  |
| 44                 | NRPS                     | Grisobactin                       | 64                                   |
| 45                 | Terpene                  | Isorenieratene                    | 100                                  |
| 46                 | NRPS                     | Coelichelin                       | 72                                   |
| 47                 | NRPS                     | none                              | 0                                    |
| 48                 | NRPS                     | Daptomycin                        | 4                                    |
| 49                 | NRPS                     | WS9326                            | 22                                   |
| 50                 | NRPS                     | Friulimicin                       | 6                                    |
| 51                 | NRPS                     | none                              | 0                                    |

Supplementary Table S3. Secondary metabolism gene cluster types in the draft genome of B226SN101, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| <b>SM5</b>         |                            |                                   |                                      |
|--------------------|----------------------------|-----------------------------------|--------------------------------------|
| <b>Cluster no.</b> | <b>Cluster type</b>        | <b>Most similar known cluster</b> | <b>% of genes showing similarity</b> |
| 1                  | Others-T1PKS               | none                              | 0                                    |
| 2                  | Others-KS                  | none                              | 0                                    |
| 3                  | Terpene                    | Isorenieratene                    | 42                                   |
| 4                  | Other                      | Gobichelin                        | 11                                   |
| 5                  | NRPS                       | Coelichelin                       | 72                                   |
| 6                  | Bacteriocin                | none                              | 0                                    |
| 7                  | NRPS                       | Coelichelin                       | 27                                   |
| 8                  | NRPS                       | none                              | 0                                    |
| 9                  | Terpene                    | Carbapenem_MM_4550                | 6                                    |
| 10                 | Terpene                    | Steffimycin                       | 11                                   |
| 11                 | Thiopeptide-Lantipeptide   | none                              | 0                                    |
| 12                 | NRPS                       | none                              | 0                                    |
| 13                 | Ectoine                    | Ectoine                           | 100                                  |
| 14                 | Others-KS                  | A33853                            | 34                                   |
| 15                 | T1PKS                      | Lasalocid                         | 5                                    |
| 16                 | Butyrolactone              | Lactonamycin                      | 5                                    |
| 17                 | Terpene                    | none                              | 0                                    |
| 18                 | T1PKS                      | Surfactin                         | 8                                    |
| 19                 | Bacteriocin                | none                              | 0                                    |
| 20                 | NRPS                       | Mirubactin                        | 50                                   |
| 21                 | Lantipeptide-Lasso peptide | none                              | 0                                    |
| 22                 | T1PKS                      | Bafilomycin                       | 33                                   |
| 23                 | NRPS                       | Paenibactin                       | 83                                   |
| 24                 | NRPS-T1PKS                 | Herboxidiene                      | 15                                   |
| 25                 | Siderophore                | Kinamycin                         | 11                                   |
| 26                 | T1PKS-NRPS                 | Myxothiazol                       | 42                                   |
| 27                 | Melanin                    | Istamycin                         | 2                                    |
| 28                 | NRPS                       | Griseoviridin/Viridogrisien       | 2                                    |
| 29                 | Terpene                    | Carotenoid                        | 27                                   |
| 30                 | T1PKS                      | Bafilomycin                       | 83                                   |
| 31                 | Other KS                   | none                              | 0                                    |
| 32                 | T2PKS-Terpene              | Spore Pigment                     | 75                                   |
| 33                 | NRPS                       | Coelibactin                       | 90                                   |
| 34                 | Terpene                    | Hopene                            | 69                                   |
| 35                 | T1PKS                      | Indanomycin                       | 17                                   |
| 36                 | Lantipeptide               | none                              | 0                                    |
| 37                 | T2PKS-Oligosaccharide      | Pristinamycin                     | 25                                   |
| 38                 | NRPS                       | SW163                             | 28                                   |

Supplementary Table S4. Secondary metabolism gene cluster types in the draft genome of SM5, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| <b>SM10</b>        |                     |                                   |                                      |
|--------------------|---------------------|-----------------------------------|--------------------------------------|
| <b>Cluster no.</b> | <b>Cluster type</b> | <b>Most similar known cluster</b> | <b>% of genes showing similarity</b> |
| 1                  | Beta-Lactam         | Clavams                           | 35                                   |
| 2                  | Ectoine             | Ectoine                           | 100                                  |
| 3                  | T1PKS               | none                              | 0                                    |
| 4                  | T1PKS               | Tetronomycin                      | 18                                   |
| 5                  | T1PKS               | ECO-02301                         | 39                                   |
| 6                  | Others-T2PKS        | Cinerubin B                       | 28                                   |
| 7                  | T1PKS               | Micromonolactam                   | 100                                  |
| 8                  | T1PKS               | none                              | 0                                    |
| 9                  | Siderophore         | Desferrioxamine B                 | 83                                   |
| 10                 | Terpene-T2PKS       | Spore Pigment                     | 83                                   |
| 11                 | Melanin             | Istamycin                         | 4                                    |
| 12                 | NRPS                | Cystathiazole A                   | 11                                   |
| 13                 | T3PKS               | Tetronasin                        | 11                                   |
| 14                 | T2PKS               | Jadomycin                         | 100                                  |
| 15                 | Lantipeptide        | none                              | 0                                    |
| 16                 | T1PKS               | Lasalocid                         | 13                                   |
| 17                 | Terpene             | none                              | 0                                    |
| 18                 | Siderophore         | none                              | 0                                    |
| 19                 | Bacteriocin         | none                              | 0                                    |
| 20                 | Butyrolactone       | Zorbamycin                        | 6                                    |
| 21                 | Terpene             | Steffinycin                       | 19                                   |
| 22                 | Lantipeptide        | Fluostatin                        | 4                                    |
| 23                 | T1PKS               | none                              | 0                                    |
| 24                 | T1PKS               | none                              | 0                                    |
| 25                 | Terpene             | none                              | 0                                    |
| 26                 | T1PKS               | Sporolide                         | 21                                   |
| 27                 | Bacteriocin         | none                              | 0                                    |
| 28                 | T1PKS               | Aculeximycin                      | 23                                   |
| 29                 | NRPS                | Daptomycin                        | 9                                    |
| 30                 | Bacteriocin         | none                              | 0                                    |
| 31                 | Thiopeptide         | none                              | 0                                    |
| 32                 | Bacteriocin         | none                              | 0                                    |
| 33                 | T1PKS-Bacteriocin   | Hygrocin                          | 29                                   |
| 34                 | Terpene             | Hopene                            | 76                                   |
| 35                 | Lantipeptide        | Ansatrienin (mycotrienin)         | 7                                    |
| 36                 | NRPS                | Tetronasin                        | 3                                    |
| 37                 | Butyrolactone       | Rabelomycin                       | 12                                   |
| 38                 | Bacteriocin         | none                              | 0                                    |
| 39                 | Other               | Laspartomycin                     | 11                                   |
| 40                 | Oligosaccharide     | none                              | 0                                    |
| 41                 | T1PKS               | Ebelactone                        | 50                                   |
| 42                 | T1PKS               | Thuggacin                         | 15                                   |
| 43                 | T1PKS               | none                              | 0                                    |
| 44                 | T1PKS               | none                              | 0                                    |

Supplementary Table S5. Secondary metabolism gene cluster types in the draft genome of SM10, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| SM11        |                          |                            |                               |
|-------------|--------------------------|----------------------------|-------------------------------|
| Cluster no. | Cluster type             | Most similar known cluster | % of genes showing similarity |
| 1           | Lasso peptide            | none                       | 0                             |
| 2           | NRPS                     | Coelichelin                | 81                            |
| 3           | Other                    | none                       | 0                             |
| 4           | Melanin                  | Istamycin                  | 4                             |
| 5           | Terpene                  | Steffimycin                | 11                            |
| 6           | Other                    | none                       | 0                             |
| 7           | T1PKS                    | Bafilomycin                | 44                            |
| 8           | Lantipeptide             | AmfS                       | 100                           |
| 9           | Ectoïne                  | Ectoïne                    | 75                            |
| 10          | Thiopeptide-Lantipeptide | none                       | 0                             |
| 11          | NRPS                     | none                       | 0                             |
| 12          | NRPS                     | none                       | 0                             |
| 13          | Lantipeptide             | none                       | 0                             |
| 14          | T1PKS                    | Bafilomycin                | 83                            |
| 15          | T1PKS                    | Concanamycin A             | 21                            |
| 16          | NRPS                     | none                       | 0                             |
| 17          | T3PKS                    | Alkylresorcinol            | 100                           |
| 18          | T1PKS                    | C-1027                     | 18                            |
| 19          | NRPS                     | A47934                     | 8                             |
| 20          | Terpene-Others KS        | Pristinamycin              | 6                             |
| 21          | Ectoïne                  | Kosinostatin               | 11                            |
| 22          | Butyrolactone            | none                       | 0                             |
| 23          | Terpene                  | Platensimycin/Platencin    | 8                             |
| 24          | Terpene                  | Isorenieratene             | 100                           |
| 25          | T1PKS-NRPS               | none                       | 0                             |
| 26          | NRPS                     | Daptomycin                 | 7                             |
| 27          | T1PKS                    | SGR-PTMs                   | 66                            |
| 28          | T2PKS                    | Granaticin                 | 21                            |
| 29          | NRPS                     | Streptolygidin             | 5                             |
| 30          | Lantipeptide             | none                       | 0                             |
| 31          | Other                    | none                       | 0                             |
| 32          | NRPS                     | Tetronasin                 | 3                             |
| 33          | T3PKS                    | Naringenin                 | 100                           |
| 34          | T1PKS                    | none                       | 0                             |
| 35          | Other KS                 | Arsenopolyketides          | 20                            |
| 36          | NRPS-T1PKS               | Herboxidiene               | 4                             |
| 37          | NRPS                     | Kirromycin                 | 28                            |
| 38          | Trans AT PKS-NRPS-T1PKS  | Kirromycin                 | 35                            |
| 39          | Terpene                  | none                       | 0                             |
| 40          | Lasso peptide            | SRO15-2005                 | 80                            |
| 41          | Terpene                  | Hopene                     | 69                            |
| 42          | Melanin                  | none                       | 0                             |
| 43          | Bacteriocin              | none                       | 0                             |
| 44          | Siderophore              | Desferrioxamine B          | 100                           |
| 45          | Siderophore              | none                       | 0                             |
| 46          | NRPS                     | Friulimicin                | 21                            |
| 47          | Other                    | Roseoflavin                | 100                           |
| 48          | NRPS                     | Griseobactin               | 58                            |
| 49          | Terpene                  | none                       | 0                             |
| 50          | Butyrolactone            | Gamma Butyrolactone        | 100                           |
| 51          | NRPS-Bacteriocin         | C-1027                     | 63                            |
| 52          | T2PKS                    | Chartreusin                | 33                            |
| 53          | Bacteriocin              | none                       | 0                             |
| 54          | Other                    | Actinomycin                | 7                             |

Supplementary Table S6. Secondary metabolism gene cluster types in the draft genome of SM11, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.



| <b>SM12</b>        |                     |                                   |                                      |
|--------------------|---------------------|-----------------------------------|--------------------------------------|
| <b>Cluster no.</b> | <b>Cluster type</b> | <b>Most similar known cluster</b> | <b>% of genes showing similarity</b> |
| 1                  | T1PKS               | Stambomycin                       | 52                                   |
| 2                  | Bacteriocin         | none                              | 0                                    |
| 3                  | T1PKS               | none                              | 0                                    |
| 4                  | T1PKS               | none                              | 0                                    |
| 5                  | T1PKS               | Guadinomine                       | 7                                    |
| 6                  | T1PKS               | none                              | 0                                    |
| 7                  | NRPS                | none                              | 0                                    |
| 8                  | Lantipeptide        | none                              | 0                                    |
| 9                  | Other KS            | none                              | 0                                    |
| 10                 | Oligosaccharide     | Pellastoren                       | 16                                   |
| 11                 | T1PKS               | none                              | 0                                    |
| 12                 | T1PKS               | none                              | 0                                    |
| 13                 | Siderophore         | none                              | 0                                    |
| 14                 | T1PKS               | none                              | 0                                    |
| 15                 | Other KS            | none                              | 0                                    |
| 16                 | NRPS                | Laspartomycin                     | 6                                    |
| 17                 | Lantipeptide        | none                              | 0                                    |
| 18                 | T1PKS               | none                              | 0                                    |
| 19                 | Siderophore         | none                              | 0                                    |
| 20                 | Terpene             | none                              | 0                                    |
| 21                 | T1PKS               | none                              | 0                                    |
| 22                 | Lantipeptide        | Kanamycin                         | 3                                    |
| 23                 | T1PKS               | Stambomycin                       | 60                                   |
| 24                 | T1PKS               | Nigericin                         | 55                                   |
| 25                 | Butyrolactone       | none                              | 0                                    |
| 26                 | NRPS                | none                              | 0                                    |
| 27                 | T1PKS               | none                              | 0                                    |
| 28                 | Ectoine             | Ectoine                           | 100                                  |
| 29                 | T1PKS               | Concanamycin                      | 21                                   |
| 30                 | T3PKS               | Zorbamycin                        | 4                                    |
| 31                 | Siderophore         | none                              | 0                                    |
| 32                 | Siderophore         | none                              | 0                                    |
| 33                 | T1PKS               | Sanglifehrin A                    | 6                                    |
| 34                 | NRPS                | Marfomycins                       | 8                                    |
| 35                 | T1PKS               | Thuggacin                         | 15                                   |
| 36                 | NRPS                | none                              | 0                                    |
| 37                 | NRPS                | none                              | 0                                    |
| 38                 | NRPS                | none                              | 0                                    |
| 39                 | B-Lactam            | Clavulanic acid                   | 20                                   |
| 40                 | T1PKS               | Concanamycin A                    | 28                                   |

Supplementary Table S7. Secondary metabolism gene cluster types in the draft genome of SM12, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| <b>SM16</b>        |                          |                                      |                                      |
|--------------------|--------------------------|--------------------------------------|--------------------------------------|
| <b>Cluster no.</b> | <b>Cluster type</b>      | <b>Most similar known cluster</b>    | <b>% of genes showing similarity</b> |
| 1                  | Terpene                  | Steffimycin                          | 11                                   |
| 2                  | Lantipeptide             | AmfS                                 | 40                                   |
| 3                  | Ectoine                  | Kosinostatin                         | 9                                    |
| 4                  | Thiopeptide-Lantipeptide | none                                 | 0                                    |
| 5                  | Siderophore              | Desferrioxamine B                    | 100                                  |
| 6                  | NRPS                     | Oxazolomycin                         | 6                                    |
| 7                  | Other                    | none                                 | 0                                    |
| 8                  | T3PKS                    | Alkylresorcinol                      | 100                                  |
| 9                  | Terpene                  | Hopene                               | 69                                   |
| 10                 | NRPS-T1PKS               | Kanamycin                            | 2                                    |
| 11                 | Bacteriocin-NRPS         | Tetronasin                           | 7                                    |
| 12                 | NRPS-T1PKS               | Heat Stable Antifungal Factor (HSAF) | 75                                   |
| 13                 | NRPS                     | none                                 | 0                                    |
| 14                 | Others KS-NRPS           | Bacillibactin                        | 15                                   |
| 15                 | Lantipeptide             | Guadinomine                          | 7                                    |
| 16                 | Terpene                  | Glycopeptidolipid                    | 20                                   |
| 17                 | NRPS-T1PKS-Lantipeptide  | none                                 | 0                                    |
| 18                 | Bacteriocin              | none                                 | 0                                    |
| 19                 | T3PKS                    | Herboxidiene                         | 6                                    |
| 20                 | Lantipeptide             | none                                 | 0                                    |
| 21                 | Lasso peptide            | SRO15-2015                           | 80                                   |
| 22                 | Melanin                  | Melanin                              | 100                                  |
| 23                 | Ectoine                  | Ectoine                              | 100                                  |
| 24                 | Terpene                  | none                                 | 0                                    |
| 25                 | Terpene                  | none                                 | 0                                    |
| 26                 | Terpene                  | Isorenieratene                       | 85                                   |
| 27                 | Other KS                 | Borrelidin                           | 9                                    |
| 28                 | Other                    | BE-14106                             | 10                                   |
| 29                 | Other KS-T1PKS-Terpene   | Isorenieratene                       | 85                                   |
| 30                 | Lantipeptide             | SRO15-2015                           | 100                                  |
| 31                 | Lantipeptide             | Labyrinthopeptin                     | 40                                   |
| 32                 | Butyrolactone            | Gamma-Butyrolactone                  | 100                                  |
| 33                 | Terpene                  | none                                 | 0                                    |
| 34                 | NRPS                     | Griseobactin                         | 94                                   |
| 35                 | NRPS                     | Coelichelin                          | 81                                   |
| 36                 | Siderophore              | Kinamycin                            | 11                                   |
| 37                 | NRPS                     | C-1027                               | 37                                   |
| 38                 | T1PKS-Butyrolactone      | Neocarzinostatin                     | 52                                   |
| 39                 | NRPS                     | none                                 | 0                                    |

Supplementary Table S8. Secondary metabolism gene cluster types in the draft genome of SM16, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| SM17        |                         |                            |                               |
|-------------|-------------------------|----------------------------|-------------------------------|
| Cluster no. | Cluster type            | Most similar known cluster | % of genes showing similarity |
| 1           | NRPS                    | none                       | 0                             |
| 2           | Terpene                 | none                       | 0                             |
| 3           | NRPS                    | none                       | 0                             |
| 4           | NRPS                    | none                       | 0                             |
| 5           | T1PKS                   | none                       | 0                             |
| 6           | Terpene                 | Hopene                     | 46                            |
| 7           | Lantipeptide            | none                       | 0                             |
| 8           | Bacteriocin             | Carotenoid                 | 18                            |
| 9           | NRPS                    | Mannopectimycin            | 40                            |
| 10          | Other                   | Albachelin                 | 20                            |
| 11          | Lantipeptide            | SAL-2242                   | 40                            |
| 12          | NRPS                    | none                       | 0                             |
| 13          | NRPS-T1PKS              | SGR-PTMs                   | 10                            |
| 14          | NRPS                    | none                       | 0                             |
| 15          | NRPS                    | none                       | 0                             |
| 16          | Ectoine                 | Ectoine                    | 75                            |
| 17          | T1PKS                   | FR-008                     | 71                            |
| 18          | Lantipeptide-NRPS-T1PKS | Antimycin                  | 26                            |
| 19          | Siderophore             | none                       | 0                             |
| 20          | Bacteriocin             | none                       | 0                             |
| 21          | NRPS                    | none                       | 0                             |
| 22          | Terpene                 | Albaflavenone              | 100                           |
| 23          | Terpene                 | none                       | 0                             |
| 24          | Bacteriocin             | none                       | 0                             |
| 25          | T1PKS                   | none                       | 0                             |
| 26          | T1PKS                   | none                       | 0                             |
| 27          | T1PKS                   | none                       | 0                             |
| 28          | T1PKS                   | Indanomycin                | 21                            |
| 29          | NRPS                    | Desotamide                 | 9                             |
| 30          | NRPS                    | Tertronasin                | 9                             |
| 31          | Siderophore             | Desferrioxamine B          | 100                           |
| 32          | NRPS                    | none                       | 0                             |
| 33          | T3PKS                   | Herboxidiene               | 12                            |
| 34          | Terpene                 | none                       | 0                             |
| 35          | T1PKS                   | none                       | 0                             |
| 36          | NRPS                    | none                       | 0                             |
| 37          | NRPS                    | none                       | 0                             |
| 38          | NRPS                    | none                       | 0                             |
| 39          | NRPS                    | none                       | 0                             |
| 40          | T1PKS                   | ECO-02301                  | 25                            |
| 41          | NRPS                    | none                       | 0                             |
| 42          | NRPS                    | none                       | 0                             |
| 43          | T1PKS                   | none                       | 0                             |
| 44          | T1PKS                   | none                       | 0                             |
| 45          | T1PKS                   | none                       | 0                             |
| 46          | Siderophore             | none                       | 0                             |
| 47          | T1PKS                   | Halstoctosanolide          | 77                            |
| 48          | NRPS                    | none                       | 0                             |

Supplementary Table S9. Secondary metabolism gene cluster types in the draft genome of SM17, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| <b>SM18</b>        |                         |                                   |                                      |
|--------------------|-------------------------|-----------------------------------|--------------------------------------|
| <b>Cluster no.</b> | <b>Cluster type</b>     | <b>Most similar known cluster</b> | <b>% of genes showing similarity</b> |
| 1                  | Butyrolactone           | Lactonamycin                      | 5                                    |
| 2                  | Other KS                | A33853                            | 34                                   |
| 3                  | NRPS                    | Coelibactin                       | 27                                   |
| 4                  | Terpene                 | Carotenoid                        | 27                                   |
| 5                  | NRPS                    | Paenibactin                       | 66                                   |
| 6                  | Melanin                 | Melanin                           | 100                                  |
| 7                  | Lantipeptide            | none                              | 100                                  |
| 8                  | T1PKS                   | Lasalocid                         | 5                                    |
| 9                  | Terpene                 | Steffimycin                       | 13                                   |
| 10                 | Other KS                | none                              | 0                                    |
| 11                 | T1PKS                   | Kirromycin                        | 3                                    |
| 12                 | NRPS                    | Coelichelin                       | 27                                   |
| 13                 | NRPS                    | Coelichelin                       | 72                                   |
| 14                 | Terpene                 | Isorenieratene                    | 57                                   |
| 15                 | T1PKS-NRPS              | Cystothiazole A                   | 17                                   |
| 16                 | NRPS                    | none                              | 0                                    |
| 17                 | Other KS-NRPS           | SW-163                            | 28                                   |
| 18                 | T1PKS                   | none                              | 0                                    |
| 19                 | Other KS-T1PKS          | none                              | 0                                    |
| 20                 | NRPS                    | Mirubactin                        | 50                                   |
| 21                 | Terpene                 | none                              | 0                                    |
| 22                 | Siderophore             | none                              | 0                                    |
| 23                 | Lantipeptide-Lassoptide | Lipopolysaccharide                | 5                                    |
| 24                 | T1PKS                   | Salinomycin                       | 18                                   |
| 25                 | Terpene                 | Hopene                            | 69                                   |
| 26                 | T1PKS                   | FD-891                            | 62                                   |
| 27                 | NRPS-T1PKS              | Herboxidiene                      | 15                                   |
| 28                 | Oligosaccharide-T2PKS   | Granaticin                        | 43                                   |
| 29                 | Bacteriocin             | none                              | 0                                    |
| 30                 | Bacteriocin             | none                              | 0                                    |
| 31                 | T1PKS                   | Bafilomycin                       | 83                                   |
| 32                 | NRPS                    | none                              | 0                                    |
| 33                 | Ectoine                 | Ectoine                           | 100                                  |
| 34                 | Terpene-T2PKS           | Spore Pigment                     | 75                                   |
| 35                 | Terpene                 | Carbapenem MM 4550                | 10                                   |
| 36                 | T1PKS                   | none                              | 0                                    |
| 37                 | T1PKS                   | Bafilomycin                       | 33                                   |
| 38                 | NRPS                    | Coelibactin                       | 100                                  |
| 39                 | NRPS                    | Mannopectimycin                   | 7                                    |
| 40                 | T1PKS                   | none                              | 0                                    |
| 41                 | Lantipeptide            | none                              | 0                                    |

Supplementary Table S10. Secondary metabolism gene cluster types in the draft genome of SM18, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| <b>SM1</b>  |               |                            |                               |
|-------------|---------------|----------------------------|-------------------------------|
| Cluster no. | Cluster type  | Most similar known cluster | % of genes showing similarity |
| 1           | NRPS          | none                       | 0                             |
| 2           | Other KS      | none                       | 0                             |
| 3           | NRPS          | none                       | 0                             |
| 4           | NRPS          | none                       | 0                             |
| 5           | Lantipeptide  | none                       | 0                             |
| 6           | NRPS          | Erythrochelin              | 42                            |
| 7           | Siderophore   | Desferrioxamine B          | 100                           |
| 8           | Terpene       | none                       | 0                             |
| 9           | Siderophore   | Kinamycin                  | 8                             |
| 10          | NRPS          | none                       | 0                             |
| 11          | Terpene       | Carotenoid                 | 27                            |
| 12          | Lantipeptide  | none                       | 0                             |
| 13          | NRPS          | none                       | 0                             |
| 14          | T1PKS         | Micromonolactam            | 100                           |
| 15          | T2PKS         | Spore Pigment              | 83                            |
| 16          | Butyrolactone | none                       | 0                             |
| 17          | Terpene       | Isorenieratene             | 28                            |
| 18          | Terpene       | Hopene                     | 15                            |
| 19          | Other KS      | none                       | 0                             |
| 20          | Terpene       | none                       | 0                             |
| 21          | NRPS          | none                       | 0                             |
| 22          | Other         | none                       | 0                             |
| 23          | Bacteriocin   | none                       | 0                             |
| 24          | T1PKS         | none                       | 0                             |
| 25          | NRPS          | none                       | 0                             |
| 26          | T1PKS-NRPS    | Myxalamid                  | 45                            |
| 27          | T1PKS         | none                       | 0                             |
| 28          | Bacteriocin   | none                       | 0                             |

Supplementary Table S11. Secondary metabolism gene cluster types in the draft genome of SM1, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| <b>FMC008</b> |              |                            |                               |
|---------------|--------------|----------------------------|-------------------------------|
| Cluster no.   | Cluster type | Most similar known cluster | % of genes showing similarity |
| 1             | Terpene      | none                       | 0                             |
| 2             | Ectoine      | Ectoine                    | 100                           |
| 3             | NRPS         | Complestatin               | 25                            |
| 4             | Other        | Aureothin                  | 22                            |
| 5             | Terpene      | none                       | 0                             |
| 6             | Siderophore  | none                       | 0                             |
| 7             | Bacteriocin  | none                       | 0                             |
| 8             | T1PKS        | none                       | 0                             |
| 9             | Terpene      | Phosphonoglycans           | 6                             |
| 10            | NRPS         | Desotamide                 | 13                            |
| 11            | Other        | Antimycin                  | 13                            |
| 12            | NRPS         | none                       | 0                             |
| 13            | Terpene      | none                       | 0                             |
| 14            | Other        | none                       | 0                             |
| 15            | Terpene      | none                       | 0                             |

Supplementary Table S12. Secondary metabolism gene cluster types in the draft genome of FMC008, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| <b>SM14</b>        |                          |                                   |                                      |
|--------------------|--------------------------|-----------------------------------|--------------------------------------|
| <b>Cluster no.</b> | <b>Cluster type</b>      | <b>Most similar known cluster</b> | <b>% of genes showing similarity</b> |
| 1                  | T1PKS                    | none                              | 0                                    |
| 2                  | T1PKS                    | none                              | 0                                    |
| 3                  | B-Lactam                 | Clavulanic acid                   | 20                                   |
| 4                  | Siderophore              | none                              | 0                                    |
| 5                  | T1PKS                    | none                              | 0                                    |
| 6                  | Lantipeptide             | none                              | 0                                    |
| 7                  | Oligosaccharide          | Pellasuren                        | 16                                   |
| 8                  | T1PKS                    | none                              | 0                                    |
| 9                  | T1PKS                    | Aculeximycin                      | 23                                   |
| 10                 | T1PKS                    | none                              | 0                                    |
| 11                 | NRPS                     | Calium-dependent antibiotic       | 12                                   |
| 12                 | Thiopeptide=Lantipeptide | none                              | 0                                    |
| 13                 | T3PKS                    | Zorbamycin                        | 4                                    |
| 14                 | NRPS                     | Tetronasin                        | 3                                    |
| 15                 | T1PKS                    | none                              | 0                                    |
| 16                 | Siderophore              | none                              | 0                                    |
| 17                 | Bacteriocin              | none                              | 0                                    |

Supplementary Table S13. Secondary metabolism gene cluster types in the draft genome of SM14, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.

| <b>SM9</b>         |                     |                                   |                                      |
|--------------------|---------------------|-----------------------------------|--------------------------------------|
| <b>Cluster no.</b> | <b>Cluster type</b> | <b>Most similar known cluster</b> | <b>% of genes showing similarity</b> |
| 1                  | Ectoine             | Ectoine                           | 100                                  |
| 2                  | Terpene             | none                              | 0                                    |
| 3                  | Siderophore         | none                              | 0                                    |
| 4                  | NRPS                | Antimycin                         | 20                                   |
| 5                  | T1PKS               | Frontalamides                     | 28                                   |
| 6                  | Terpene             | Carotenoid                        | 18                                   |
| 7                  | Terpene             | none                              | 0                                    |
| 8                  | Bacteriocin         | none                              | 0                                    |
| 9                  | Siderophore         | none                              | 0                                    |
| 10                 | Terpene             | none                              | 0                                    |
| 11                 | Other               | none                              | 0                                    |
| 12                 | Terpene             | none                              | 0                                    |
| 13                 | T1PKS               | none                              | 0                                    |
| 14                 | T1PKS               | none                              | 0                                    |
| 15                 | NRPS                | Complestatin                      | 25                                   |
| 16                 | Terpene             | Hopene                            | 15                                   |

Supplementary Table S14. Secondary metabolism gene cluster types in the draft genome of SM9, most similar known clusters and % of genes showing similarity to known clusters as determined by antiSMASH.