**Supplementary File 1:** Functional group membership – taxonomic assignments for each of the OTUs in each of the 18 functional groups identified using the functionInk approach

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| **Cluster/functional group** | **OTUs (Nearest species-level designation)**  |
| **1** | 1. *Arthrobacter protophormiae*
2. *Arthrobacter sulfureus*
3. *Arthrobacter.sp.*
4. *Arthrobacter.spp.*
 |
| **2** | 1. *Comamonas spp.*
2. *Pseudomonas lutea*
3. *Pseudomonas marincola*
4. *Pseudomonas migulae*
5. *Pseudomonas plecoglossicida*
6. *Pseudomonas putida*
7. *Pseudomonas rhizosphaerae*
8. *Pseudomonas syringae*
9. *Pseudomonas thivervalensis*
10. *Pseudomonas tolaasii*
11. *Pseudomonas trivialis*
12. *Pseudomonas veronii*
13. *Pseudomonas vranovensis*
14. *Stenotrophomonas rhizophila*
 |
| **3** | 1. *Bacillus thermoamylovorans*
2. *Cloacibacterium spp.*
3. *Corynebacterium diphtheriae*
 |
| **5** | 1. *Acinetobacter genomospecies 3*
2. *Acinetobacter towneri*
3. *Novispirillum itersonii*
4. *Ralstonia pickettii*
 |
| **8** | 1. *Chryseobacterium gregarium*
2. *Dysgonomonas spp.*
3. *Pedobacter aquatilis*
4. *Pedobacter spp.*
 |
| **13** | 1. *Hylemonella spp.*
2. *Acidovorax konjaci*
3. *Variovorax spp.*
 |
| **14** | 1. *Streptomyces sanglieri*
2. *Streptomyces xanthochromogenes*
3. *Streptomyces viridochromogenes*
 |
| **16** | 1. *Janthinobacterium lividum*
2. *Novosphingobium subarcticum*
3. *Pedobacter daejeonensis*
 |
| **17** | 1. *Acinetobacter piperi*
2. *Massilia spp.*
3. *Pedobacter cryoconitis*
 |
| **18** | 1. *Cedecea spp.*
2. *Citrobacter werkmanii*
3. *Erwinia persicina*
4. *Erwinia rhapontici*
5. *Escherichia shigella spp.*
6. *Klebsiella pneumoniae*
7. *Pantoea agglomerans*
8. *Pantoea vagens*
9. *Serratia fonticola*
10. *Serratia liquefaciens*
11. *Serratia quinivorans*
12. *Trabulsiella spp.*
 |
| **20** | 1. *Acidovorax spp.*
2. *Acinetobacter calcoaceticus*
3. *Acinetobacter johnsonii*
4. *Aquabacterium spp.*
5. *Brevundimonas aurantiaca*
6. *Caenimonas spp.*
7. *Delftia lacustris*
8. *Herbaspirillum rubrisubalbicans*
9. *Herbaspirillum spp.*
10. *Leptothrix spp.*
11. *Massilia timonae*
12. *Paucimonas spp.*
13. *Phenylobacterium spp.*
14. *Pseudomonas balearica*
15. *Pseudomonas pseudoalcaligenes*
16. *Stenotrophomonas maltophilia*
 |
| **22** | 1. *Chryseobacterium soldanellicola*
2. *Epilithonimonas lactis*
3. *Pedobacter wanjuense*
 |
| **23** | 1. *Rhizobium cellulosilyticus*
2. *Rhizobium giardinii*
3. *Rhizobium leguminosarum*
 |
| **24** | 1. *Haemophilus parainfluenzae*
2. *Neisseria subflava*
3. *Streptococcus salivarius*
 |
| **27** | 1. *Bosea thiooxidans*
2. *Brevundimonas bullata*
3. *Brevundimonas variabilis*
 |
| **28** | 1. *Corynebacteriales spp.*
2. *Nocardioides spp.*
3. *Pleomorphomonas spp.*
4. *Vogesella spp.*
 |
| **35** | 1. *Pseudoxanthomonas taiwanensis*
2. *Tepidimonas spp.*
3. *Weeksella spp.*
 |
| **39** | 1. *Agrobacterium tumefaciens*
2. *Rhizobium spp.*
3. *Rhizobium sullae*
 |
| **45 (combined with clusters 48, 49, 56)** | 1. *Paenibacillus borealis*
2. *Paenibacillus chondroitinus*
3. *Paenibacillus favisporus*
4. *Paenibacillus lautus*
5. *Paenibacillus wynnii*
6. *Paenibacillus xylanilyticus*
7. *Paenibacillus.spp.*
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