**Supporting File 2. Number of genes identified in soil and bark samples in all prokaryotic KEGG pathways.** Counts represent the number of genes present with at least one read in each sample for the corresponding group (soil or bark).

|  |  |  |
| --- | --- | --- |
| Carbohydrate metabolism | Soil | Bark |
|  map00010 Glycolysis / Gluconeogenesis  | 77 | 71 |
|  map00020 Citrate cycle  | 46 | 42 |
|  map00030 Pentose phosphate pathway  | 58 | 56 |
|  map00040 Pentose and glucuronate interconversions  | 57 | 57 |
|  map00051 Fructose and mannose metabolism  | 74 | 74 |
|  map00052 Galactose metabolism  | 37 | 38 |
|  map00053 Ascorbate and aldarate metabolism  | 29 | 29 |
|  map00500 Starch and sucrose metabolism  | 69 | 66 |
|  map00520 Amino sugar and nucleotide sugar metabolism  | 105 | 102 |
|  map00620 Pyruvate metabolism  | 80 | 78 |
|  map00630 Glyoxylate and dicarboxylate metabolism  | 78 | 78 |
|  map00640 Propanoate metabolism  | 78 | 74 |
|  map00650 Butanoate metabolism  | 74 | 68 |
|  map00660 C5-Branched dibasic acid metabolism  | 19 | 17 |
|  map00562 Inositol phosphate metabolism  | 19 | 19 |
|  Energy metabolism |  |  |
|  map00190 Oxidative phosphorylation  | 89 | 88 |
|  map00195 Photosynthesis  | 22 | 47 |
|  map00196 Photosynthesis - antenna proteins  | 2 | 26 |
|  map00710 Carbon fixation in photosynthetic organisms  | 25 | 25 |
|  map00720 Carbon fixation pathways in prokaryotes  | 70 | 56 |
|  map00680 Methane metabolism  | 122 | 103 |
|  map00910 Nitrogen metabolism  | 45 | 39 |
|  map00920 Sulfur metabolism  | 75 | 64 |
|  Lipid metabolism |  |  |
|  map00061 Fatty acid biosynthesis  | 24 | 23 |
|  map00062 Fatty acid elongation  | 2 | 1 |
|  map00071 Fatty acid degradation  | 26 | 25 |
|  map00072 Synthesis and degradation of ketone bodies  | 8 | 8 |
|  map00073 Cutin, suberine and wax biosynthesis  | 1 | 1 |
|  map00100 Steroid biosynthesis  | 3 | 4 |
|  map00561 Glycerolipid metabolism  | 31 | 30 |
|  map00564 Glycerophospholipid metabolism  | 39 | 41 |
|  map00565 Ether lipid metabolism  | 6 | 7 |
|  map00600 Sphingolipid metabolism  | 13 | 12 |
|  map00590 Arachidonic acid metabolism  | 5 | 6 |
|  map00591 Linoleic acid metabolism  | 2 | 3 |
|  map00592 alpha-Linolenic acid metabolism  | 4 | 5 |
|  map01040 Biosynthesis of unsaturated fatty acids  | 9 | 9 |
|  Nucleotide metabolism |  |  |
|  map00230 Purine metabolism  | 115 | 111 |
|  map00240 Pyrimidine metabolism  | 68 | 65 |
|  Amino acid metabolism |  |  |
|  map00250 Alanine, aspartate and glutamate metabolism  | 44 | 44 |
|  map00260 Glycine, serine and threonine metabolism  | 78 | 79 |
|  map00270 Cysteine and methionine metabolism  | 73 | 74 |
|  map00280 Valine, leucine and isoleucine degradation  | 47 | 44 |
|  map00290 Valine, leucine and isoleucine biosynthesis  | 15 | 15 |
|  map00300 Lysine biosynthesis  | 30 | 29 |
|  map00310 Lysine degradation  | 30 | 30 |
|  map00220 Arginine biosynthesis  | 40 | 39 |
|  map00330 Arginine and proline metabolism  | 70 | 65 |
|  map00340 Histidine metabolism  | 31 | 33 |
|  map00350 Tyrosine metabolism  | 38 | 39 |
|  map00360 Phenylalanine metabolism  | 42 | 43 |
|  map00380 Tryptophan metabolism  | 31 | 31 |
|  map00400 Phenylalanine, tyrosine and tryptophan biosynthesis  | 46 | 45 |
|  Metabolism of other amino acids |  |  |
|  map00410 beta-Alanine metabolism  | 25 | 25 |
|  map00430 Taurine and hypotaurine metabolism  | 14 | 14 |
|  map00440 Phosphonate and phosphinate metabolism  | 16 | 18 |
|  map00450 Selenocompound metabolism  | 19 | 19 |
|  map00460 Cyanoamino acid metabolism  | 9 | 9 |
|  map00471 D-Glutamine and D-glutamate metabolism  | 9 | 9 |
|  map00472 D-Arginine and D-ornithine metabolism  | 6 | 5 |
|  map00473 D-Alanine metabolism  | 5 | 5 |
|  00480 Glutathione metabolism  | 24 | 23 |
|  Glycan biosynthesis and metabolism |  |  |
|  map00510 N-Glycan biosynthesis  | 3 | 3 |
|  map00513 Various types of N-glycan biosynthesis  | 3 | 3 |
|  map00515 Mannose type O-glycan biosynthesis  | 1 | 1 |
|  map00514 Other types of O-glycan biosynthesis  | 2 | 2 |
|  map00531 Glycosaminoglycan degradation  | 9 | 9 |
|  map00603 Glycosphingolipid biosynthesis - globo and isoglobo series  | 3 | 3 |
|  map00604 Glycosphingolipid biosynthesis - ganglio series  | 1 | 1 |
|  map00540 Lipopolysaccharide biosynthesis  | 37 | 35 |
|  map00550 Peptidoglycan biosynthesis  | 34 | 29 |
|  map00511 Other glycan degradation  | 12 | 12 |
|  map00571 Lipoarabinomannan (LAM) biosynthesis | 14 | 12 |
|  map00572 Arabinogalactan biosynthesis - Mycobacterium  | 10 | 7 |
|  Metabolism of cofactors and vitamins |  |  |
|  map00730 Thiamine metabolism  | 22 | 21 |
|  map00740 Riboflavin metabolism  | 23 | 16 |
|  map00750 Vitamin B6 metabolism  | 11 | 10 |
|  map00760 Nicotinate and nicotinamide metabolism  | 43 | 40 |
|  map00770 Pantothenate and CoA biosynthesis  | 26 | 27 |
|  map00780 Biotin metabolism  | 14 | 13 |
|  map00785 Lipoic acid metabolism  | 5 | 5 |
|  map00790 Folate biosynthesis  | 43 | 42 |
|  map00670 One carbon pool by folate  | 22 | 20 |
|  map00830 Retinol metabolism  | 4 | 4 |
|  map00860 Porphyrin and chlorophyll metabolism  | 81 | 85 |
|  map00130 Ubiquinone and other terpenoid-quinone biosynthesis  | 38 | 41 |
|  Metabolism of terpenoids and polyketides |  |  |
|  map00900 Terpenoid backbone biosynthesis  | 29 | 29 |
|  map00909 Sesquiterpenoid and triterpenoid biosynthesis  | 3 | 3 |
|  map00906 Carotenoid biosynthesis  | 20 | 21 |
|  map00981 Insect hormone biosynthesis  | 1 | 1 |
|  map00908 Zeatin biosynthesis  | 2 | 2 |
|  map00903 Limonene and pinene degradation  | 7 | 7 |
|  map00281 Geraniol degradation  | 13 | 13 |
|  map01052 Type I polyketide structures  | 1 | 1 |
|  map01051 Biosynthesis of ansamycins  | 4 | 4 |
|  map01059 Biosynthesis of enediyne antibiotics  | 14 | 17 |
|  map01056 Biosynthesis of type II polyketide backbone  | 5 | 4 |
|  map01057 Biosynthesis of type II polyketide products  | 3 | 3 |
|  map00253 Tetracycline biosynthesis  | 5 | 5 |
|  map00523 Polyketide sugar unit biosynthesis  | 10 | 10 |
|  map01054 Nonribosomal peptide structures  | 1 | 1 |
|  map01053 Biosynthesis of siderophore group nonribosomal peptides  | 13 | 14 |
|  map01055 Biosynthesis of vancomycin group antibiotics  | 10 | 9 |
|  Biosynthesis of other secondary metabolites |  |  |
|  map00940 Phenylpropanoid biosynthesis  | 7 | 7 |
|  map00945 Stilbenoid, diarylheptanoid and gingerol biosynthesis  | 1 | 1 |
|  map00941 Flavonoid biosynthesis  | 1 | 1 |
|  map00944 Flavone and flavonol biosynthesis  | 1 | 1 |
|  map00943 Isoflavonoid biosynthesis  | 1 | 1 |
|  map00901 Indole alkaloid biosynthesis  | 1 | 1 |
|  map00950 Isoquinoline alkaloid biosynthesis  | 8 | 8 |
|  map00960 Tropane, piperidine and pyridine alkaloid biosynthesis  | 11 | 11 |
|  map00232 Caffeine metabolism  | 2 | 2 |
|  map00965 Betalain biosynthesis  | 3 | 3 |
|  map00966 Glucosinolate biosynthesis  | 2 | 2 |
|  map00311 Penicillin and cephalosporin biosynthesis  | 6 | 6 |
|  map00332 Carbapenem biosynthesis  | 2 | 2 |
|  map00261 Monobactam biosynthesis  | 15 | 15 |
|  map00521 Streptomycin biosynthesis  | 12 | 12 |
|  map00524 Neomycin, kanamycin and gentamicin biosynthesis  | 1 | 1 |
|  map00525 Acarbose and validamycin biosynthesis  | 5 | 5 |
|  map00401 Novobiocin biosynthesis  | 8 | 8 |
|  map00404 Staurosporine biosynthesis  | 2 | 2 |
|  map00405 Phenazine biosynthesis  | 7 | 6 |
|  map00333 Prodigiosin biosynthesis  | 3 | 3 |
|  Xenobiotics biodegradation and metabolism |  |  |
|  map00362 Benzoate degradation  | 74 | 71 |
|  map00627 Aminobenzoate degradation  | 43 | 41 |
|  map00364 Fluorobenzoate degradation  | 10 | 10 |
|  map00625 Chloroalkane and chloroalkene degradation  | 15 | 16 |
|  map00361 Chlorocyclohexane and chlorobenzene degradation  | 17 | 16 |
|  map00623 Toluene degradation  | 19 | 15 |
|  map00622 Xylene degradation  | 21 | 23 |
|  map00633 Nitrotoluene degradation  | 16 | 11 |
|  map00642 Ethylbenzene degradation  | 5 | 3 |
|  map00643 Styrene degradation  | 15 | 15 |
|  map00791 Atrazine degradation  | 10 | 10 |
|  map00930 Caprolactam degradation  | 12 | 12 |
|  map00363 Bisphenol degradation  | 2 | 2 |
|  map00621 Dioxin degradation  | 9 | 9 |
|  map00626 Naphthalene degradation  | 10 | 10 |
|  map00624 Polycyclic aromatic hydrocarbon degradation  | 11 | 11 |
|  map00365 Furfural degradation  | 7 | 7 |
|  map00984 Steroid degradation  | 12 | 14 |
|  map00980 Metabolism of xenobiotics by cytochrome P450  | 3 | 3 |
|  map00982 Drug metabolism - cytochrome P450  | 5 | 5 |
|  map00983 Drug metabolism - other enzymes  | 17 | 17 |
|  Transcription |  |  |
|  map03020 RNA polymerase  | 12 | 12 |
|  map03022 Basal transcription factors  | 5 | 4 |
|  Translation |  |  |
|  map03010 Ribosome  | 63 | 67 |
|  map00970 Aminoacyl-tRNA biosynthesis  | 35 | 33 |
|  map03013 RNA transport  | 8 | 8 |
|  map03015 mRNA surveillance pathway  | 1 | 2 |
|  map03008 Ribosome biogenesis in eukaryotes  | 7 | 6 |
|  Folding, sorting and degradation |  |  |
|  map03060 Protein export  | 18 | 18 |
|  map04141 Protein processing in endoplasmic reticulum  | 5 | 5 |
|  map04122 Sulfur relay system  | 21 | 18 |
|  map03050 Proteasome  | 4 | 4 |
|  map03018 RNA degradation  | 20 | 19 |
|  Replication and repair |  |  |
|  map03030 DNA replication  | 26 | 24 |
|  map03410 Base excision repair  | 20 | 19 |
|  map03420 Nucleotide excision repair  | 11 | 10 |
|  map03430 Mismatch repair  | 23 | 22 |
|  map03440 Homologous recombination  | 26 | 25 |
|  map03450 Non-homologous end-joining  | 3 | 2 |
|  Membrane transport |  |  |
|  map02010 ABC transporters  | 357 | 344 |
|  map02060 Phosphotransferase system (PTS) | 35 | 30 |
|  map03070 Bacterial secretion system  | 53 | 54 |
|  Signal transduction |  |  |
|  map02020 Two-component system  | 300 | 262 |
|  Transport and catabolism |  |  |
|  map04142 Lysosome  | 15 | 15 |
|  map04146 Peroxisome  | 18 | 18 |
|  Cell growth and death |  |  |
|  map04112 Cell cycle - Caulobacter  | 27 | 27 |
|  Cellular community - prokaryotes |  |  |
|  map02024 Quorum sensing  | 110 | 102 |
|  map05111 Biofilm formation - Vibrio cholerae  | 41 | 37 |
|  map02025 Biofilm formation - Pseudomonas aeruginosa  | 54 | 51 |
|  map02026 Biofilm formation - Escherichia coli  | 36 | 30 |
|  Cell motility |  |  |
|  map02030 Bacterial chemotaxis  | 23 | 23 |
|  map02040 Flagellar assembly  | 37 | 35 |