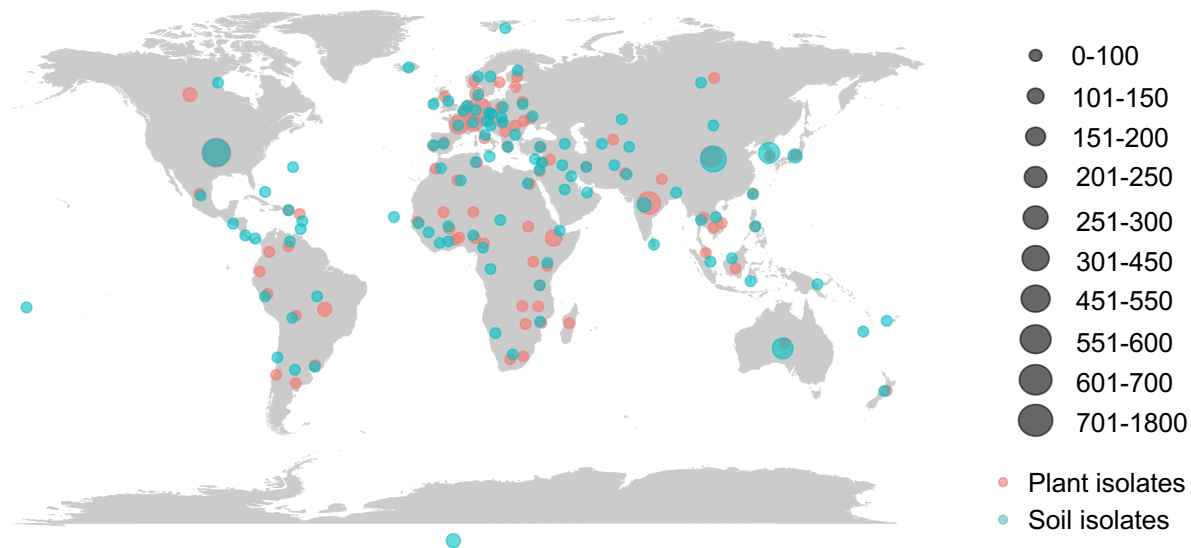
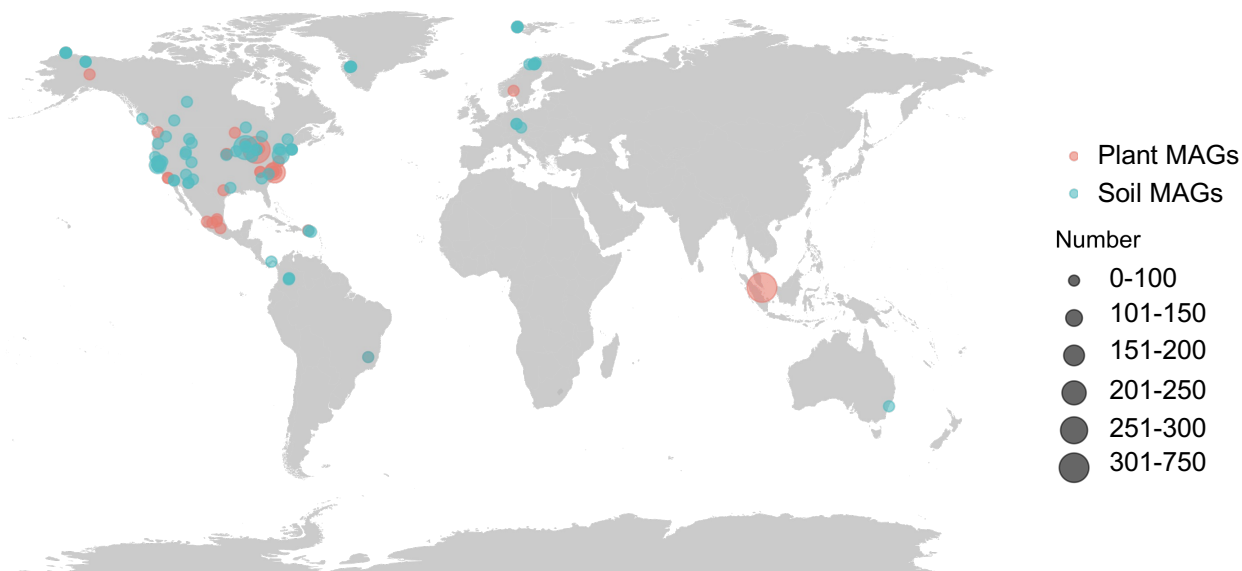


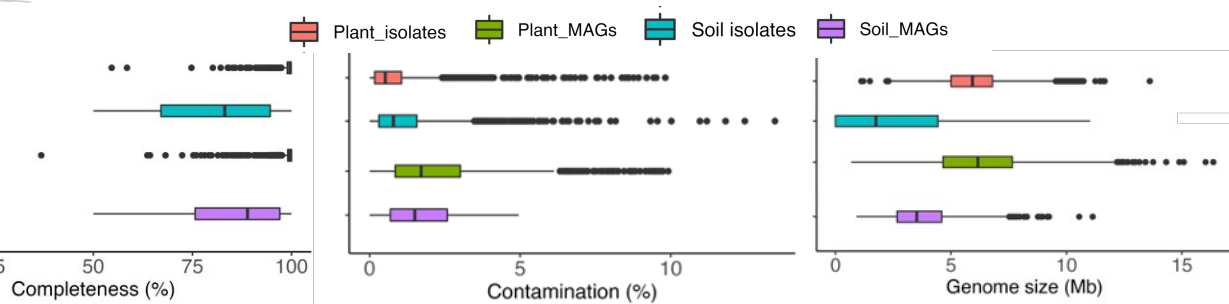
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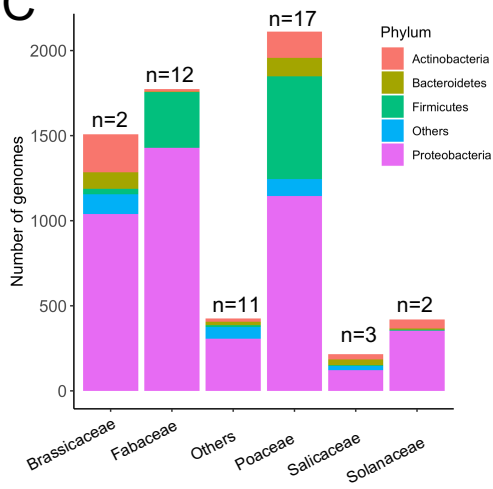
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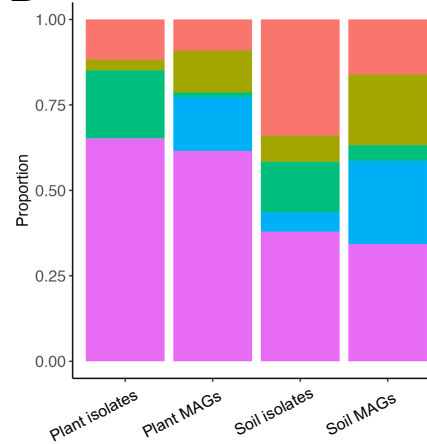
B



C



D



E

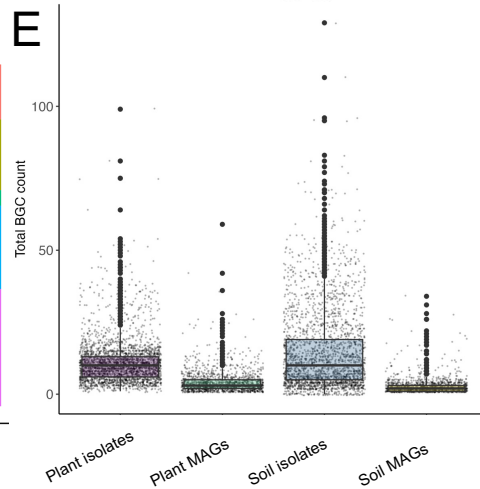
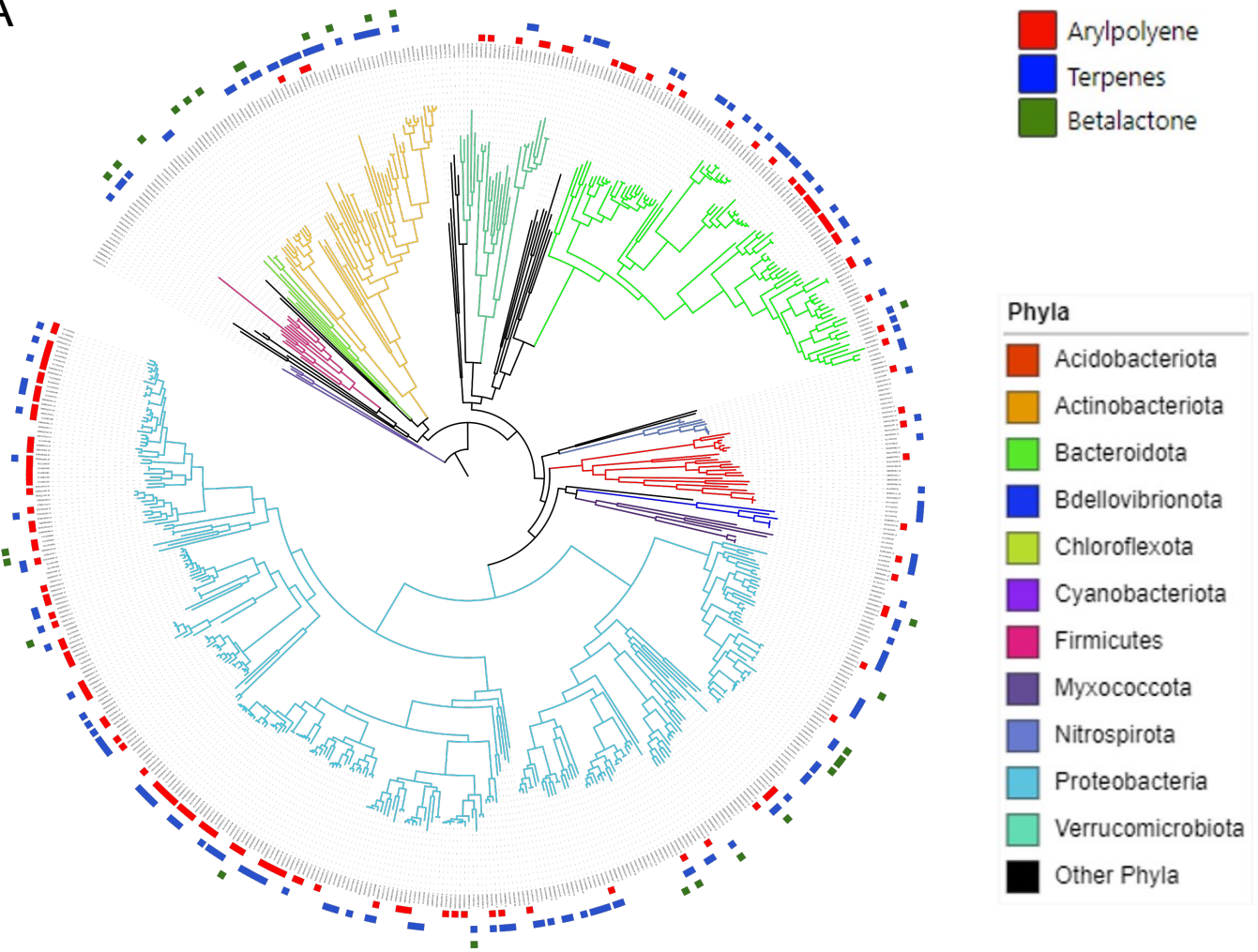


Figure S1. Metadata information and quality profile of isolates and MAGs

A. Global distribution of the genomes of isolates and MAGs, included in this study. The size of the circles indicate the number of genomes and colors represent either MAGs or isolates. Inset A-1 and A-2 are presented for isolates and MAGs, respectively. **B.** Completeness, contamination, and size profile of genomes included in this study. **C.** Host plant family level distribution of plant associated genomes (both isolates, and MAGs combined) included in this study. The phylum-level distribution of these genomes is shown in different colors. The numbers on top of each bar indicate the number of representative plant species under each plant family. **D.** The microbiome composition of plant isolates, soil isolates, plant MAGs, and soil MAGs datasets at the phylum level. **E.** Total BGC count per genome among members of plant isolates, soil isolates, plant MAGs, and soil MAGs.

A



B

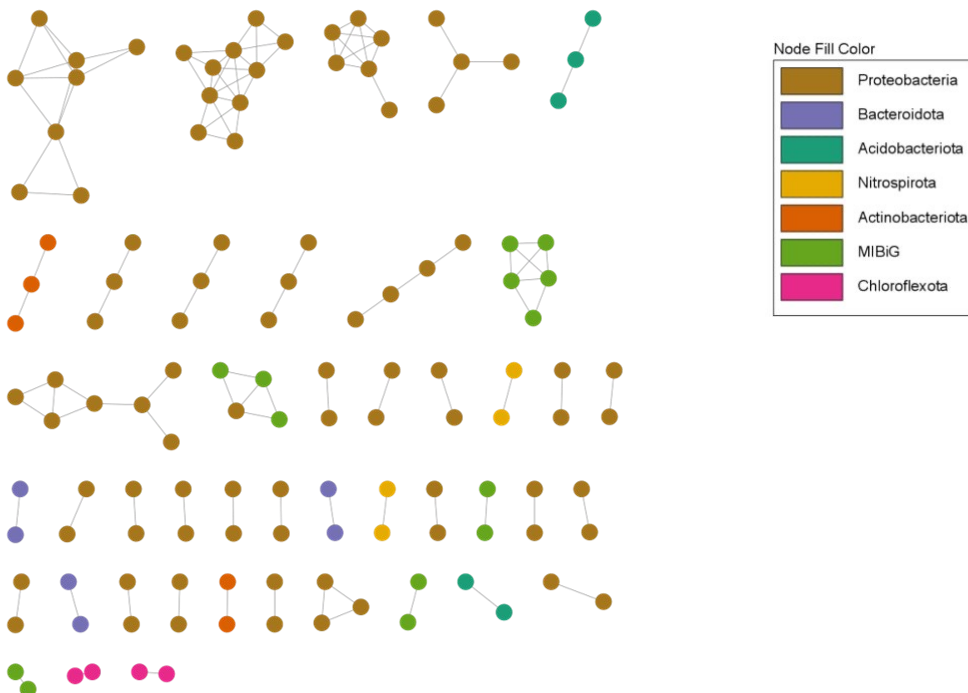


Figure S2. Conservation patterns of terpenes and aryl polyenes in plant MAGs dataset.

A. Phylogenetic tree showing presence-absence pattern of terpenes, aryl polyenes and betalactones in plant MAGs. Stronger phylogenetic conservation of terpenes and aryl polyenes compared to betalactones are shown by their three respective outer rings (blue, red, and green respectively). The taxonomic classes of the plant MAGs are shown in different colors of the phylogenetic tree branches. **B.** Sequence similarity network of terpenes GCFs found in plant MAGs (singletons are not shown). Each node represents individual terpene gene clusters, colored according to taxonomy. Nodes with existing reference (MIBiG) are highlighted in green.

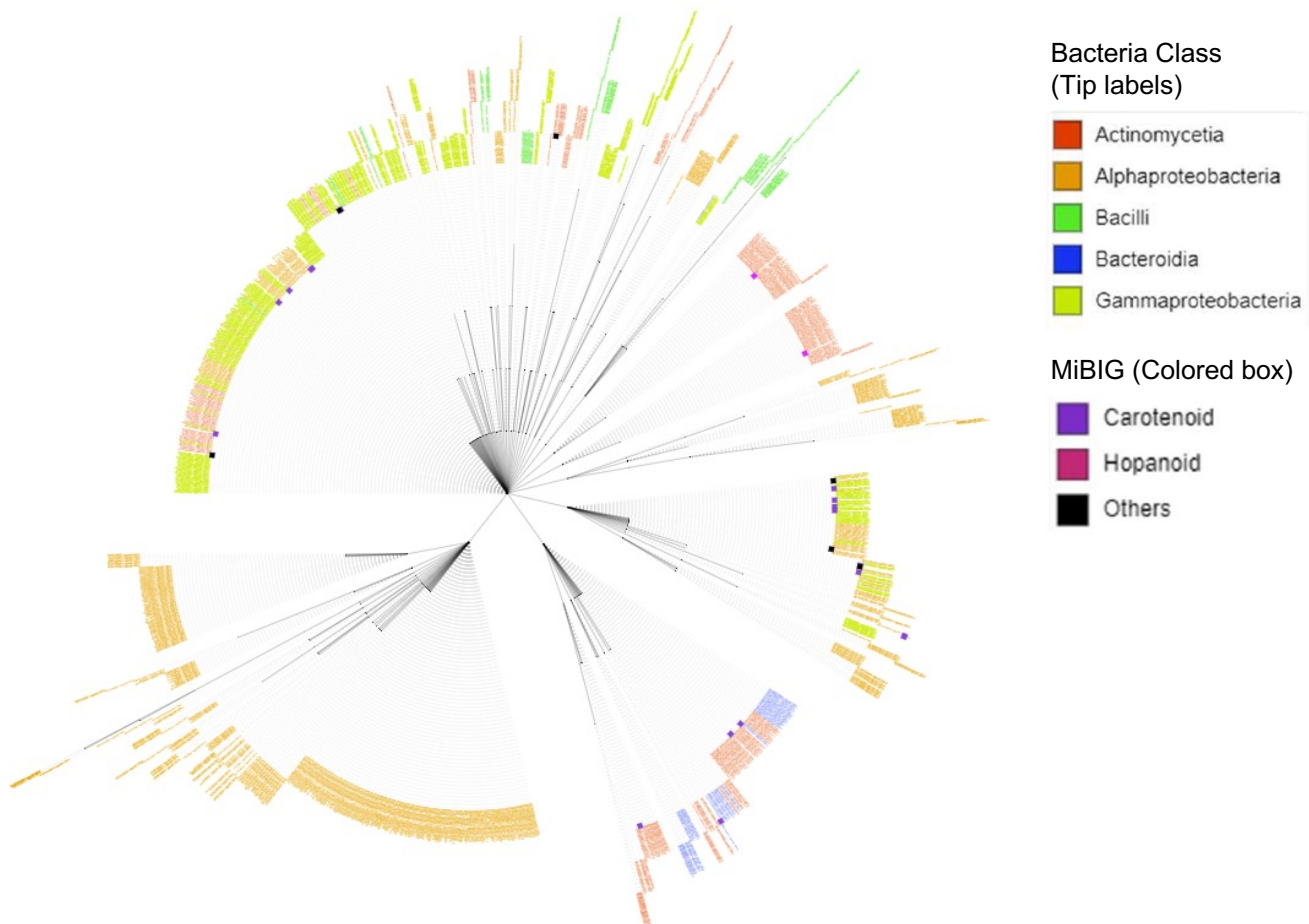


Figure S3. Phylogenetic tree of SQS/PSY domains in plant isolates. The color of tip labels indicates taxonomic information at the class level. The functional role of the domains is indicated in colored squares according to MiBiG.